# Assessment Report for Biology and Health Sciences Department (BIOLOGY MAJOR) 2021-2022 Academic Year

The Biology and Health Sciences faculty held an Assessment Meeting via Teams on May 10, 2022:

- Department faculty who attended the meeting:
  - o Adam Schneider
  - Andrea Duina
  - o Andrew Schurko
  - o J.D. Gantz
  - o Jenn Dearilf
  - o Matt Moran
  - o Maureen McClung
- Department faculty who did not attended the meeting:
  - Laura McDonald (on maternity leave)

The goal of the meeting was to assess the success of the program in meeting the Student Learning Outcome (SLO) 4 from our Assessment Plan – this SLO is:

• Discuss and investigate how fields of biology are interconnected and engage with other scientific disciplines, including the growing role of interdisciplinarity in scientific research

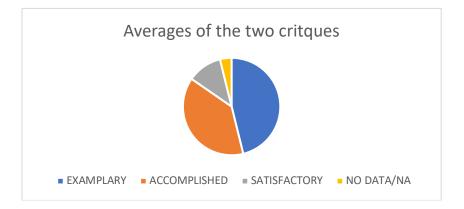
To help us assess this, we used the following assessment tools:

- Direct Assessment Tool:
  - Grades on Literature Critiques students carried out as part of Biology Senior Seminar
- Indirect Assessment Tool:
  - Biology Exit Survey (this is provided to you as a separate attached document)

Below, are the data on the *Direct Assessment* Tool:

# <u>Grades on Literature Critiques students carried out as part of Biology</u> <u>Senior Seminar</u>

For this assessment tool, students produced two literature critiques as part of their assignments in Senior Seminar (BIOL 497). The faculty members teaching the course selected two papers which contain presentations of important concepts in Cell and Molecular Biology, Organismal Biology, and/or Ecology and Evolution and the students were then asked to produce critiques of each of these papers. All of the critiques were be evaluated using a rubric created by the Biology faculty. The outcomes from these two critiques are shown in the chart below.



Below, are the data on the *Indirect Assessment* Tool:

# **Biology Exit Survey**

Indirect assessment of SLO4 was carried out through an Exit Survey. This survey has been provided to you along with this report. The outcomes from it are briefly summarized below:

- When presented with this statement "As a result of my education as a BIOL major, I am able to Relate skills and knowledge of biology to other disciplines in the liberal arts and evaluate the ways in which the life sciences interface with various aspects of our society, including ethics and governance."
  - 5/10 students Strongly Agreed with it
  - o 5/10 students Agreed with it
  - 0
- Students were also asked to elaborate on SLO4 in an open-response format. As can be seen in the survey, student responses were very positive, with several describing having gained the ability to make connections between within different fields of biology and across different disciplines.

## **Reflection of faculty members on SLO4 outcomes**

The BIOL/HESC department faculty found the outcomes from this assessment (both direct and indirect) as very positive and as evidence that we are meeting the Student Learning Outcome quite well. The answers from the open response question on the Exit Survey was particularly revealing in that they showed that students feel that their education has contributed to their ability to make connections between within different fields of biology and across different disciplines.

## Additional notes on SLO4 Assessment

- The current Assessment Plan for SLO4 includes Literature Critiques of three articles forthis year, only two critiques were carried out --- the instructor of senior seminar indicate that two critiques is more feasible than three, and as such, we will work in the fall to revise the Assessment Plan to reflect this change.
- The current Assessment Plan for SLO4 also includes evaluation of discussions related to the articles discussed at senior seminar these evaluations were not carried out this year, but we will make sure to incorporate them in future years.
- The current Assessment Plan for SLO4 also included a "Global Climate Change" module that was to be incorporated as part of our Ecology and Evolution course. George Harper had proposed to implement this module in his class, but with his departure we decided to remove it and as such, we will not be using this for SLO4 assessment. We will work in the fall to revise the Assessment Plan to reflect this change.
- The response rates on the Exit Survey were a bit low (10 out of 24 graduating seniors) in future years, we plan to incorporate the Exit Survey into senior seminar in order to increase participation.

| 1 - A. Courses and Fa   | cuity      |      |        |           |         |   |      |         |        |     |          |
|-------------------------|------------|------|--------|-----------|---------|---|------|---------|--------|-----|----------|
| Breadth of curriculum   | ı          |      |        |           |         |   |      |         |        |     |          |
| Response Option         |            |      | Weight | Frequency | Percent |   | Perc | ent Res | oonses |     | Means    |
| Very Satisfied          |            |      | (5)    | 4         | 40.00%  |   |      |         |        |     | 4.40     |
| Satisfied               |            |      | (4)    | 6         | 60.00%  |   |      |         |        |     |          |
| Neither Satisfied nor D | ssatisfied |      | (3)    | 0         | 0.00%   |   |      |         |        |     |          |
| Dissatisfied            |            |      | (2)    | 0         | 0.00%   |   |      |         |        |     |          |
| Very Dissatisfied       |            |      | (1)    | 0         | 0.00%   |   |      |         |        |     |          |
| N/A                     |            |      | (0)    | 0         | 0.00%   |   |      |         |        |     |          |
|                         |            |      |        |           |         | 0 | 25   | 50      | 75     | 100 | Question |
| Response Rate           | Mean       | STD  |        |           |         |   |      |         |        |     |          |
| 10/10 (100%)            | 4.40       | 0.52 |        |           |         |   |      |         |        |     |          |

| 1 - A. Courses and Fa   | cuity       |      |        |           |         |   |      |           |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|-----------|-------|-----|----------|
| Quality of curriculum   |             |      |        |           |         |   |      |           |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp: | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 6         | 60.00%  |   |      |           |       |     | 4.50     |
| Satisfied               |             |      | (4)    | 3         | 30.00%  |   |      |           |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |      |           |       |     |          |
| Dissatisfied            |             |      | (2)    | 0         | 0.00%   |   |      |           |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   |   |      |           |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   | ] |      |           |       |     |          |
|                         |             |      |        |           |         | 0 | 25   | 50        | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |           |       |     |          |
| 10/10 (100%)            | 4.50        | 0.71 |        |           |         |   |      |           |       |     |          |

| 1 - A. Courses and Fa   | culty       |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Availability of course  | s           |      |        |           |         |   |      |          |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 1         | 10.00%  |   |      |          |       |     | 4.00     |
| Satisfied               |             |      | (4)    | 8         | 80.00%  |   |      |          |       |     | 4.00     |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   | 1 |      |          |       |     |          |
|                         |             |      |        |           |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.00        | 0.47 |        |           |         |   |      |          |       |     |          |

| 1 - A. Courses and Fa   | culty       |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Accessibility of facul  | ty          |      |        |           |         |   |      |          |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 6         | 60.00%  |   |      |          |       |     | 4.50     |
| Satisfied               |             |      | (4)    | 3         | 30.00%  |   |      |          |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   |   |      |          |       |     |          |
|                         |             |      |        | •         |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.50        | 0.71 |        |           |         |   |      |          |       |     |          |

| 1 - A. Courses and Fa   | culty       |      |        |           |         |   |      |         |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|---------|-------|-----|----------|
| Quality of instruction  |             |      |        |           |         |   |      |         |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Res | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 6         | 60.00%  |   |      |         |       |     | 4.50     |
| Satisfied               |             |      | (4)    | 3         | 30.00%  |   |      |         |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |      |         |       |     |          |
| Dissatisfied            |             |      | (2)    | 0         | 0.00%   |   |      |         |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   |   |      |         |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   |   |      |         |       |     |          |
|                         |             |      |        |           |         | 0 | 25   | 50      | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |         |       |     |          |
| 10/10 (100%)            | 4.50        | 0.71 |        |           |         |   |      |         |       |     |          |

| 1 - A. Courses and Fa   | cuity        |      |        |           |         |   |       |         |       |     |          |
|-------------------------|--------------|------|--------|-----------|---------|---|-------|---------|-------|-----|----------|
| Preparation for profe   | ssional scho | lool |        |           |         |   |       |         |       |     |          |
| Response Option         |              |      | Weight | Frequency | Percent |   | Perce | nt Resp | onses |     | Means    |
| Very Satisfied          |              |      | (5)    | 5         | 50.00%  |   |       |         |       |     | 4.50     |
| Satisfied               |              |      | (4)    | 5         | 50.00%  |   |       |         |       |     |          |
| Neither Satisfied nor D | issatisfied  |      | (3)    | 0         | 0.00%   |   |       |         |       |     |          |
| Dissatisfied            |              |      | (2)    | 0         | 0.00%   |   |       |         |       |     |          |
| Very Dissatisfied       |              |      | (1)    | 0         | 0.00%   |   |       |         |       |     |          |
| N/A                     |              |      | (0)    | 0         | 0.00%   |   |       |         |       |     |          |
|                         |              |      |        |           |         | 0 | 25    | 50      | 75    | 100 | Question |
| Response Rate           | Mean         | STD  |        |           |         |   |       |         |       |     |          |
| 10/10 (100%)            | 4.50         | 0.53 |        |           |         |   |       |         |       |     |          |

| Preparation for caree   | r           |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 4         | 40.00%  |   |      |          |       |     | 4.40     |
| Satisfied               |             |      | (4)    | 6         | 60.00%  |   |      |          | l     |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 0         | 0.00%   |   |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 0         | 0.00%   |   |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   |   |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   |   |      |          |       |     |          |
|                         |             |      |        |           |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.40        | 0.52 |        |           |         |   |      |          |       |     |          |

| 2 - Do you have any       | y comments or observations about the courses and faculty in the BIOL program?   |
|---------------------------|---|
| Response Rate             | 3/10 (30%)  |
| I feel like upper-level c | ourses and electives within the biology department do a great job of teaching and finding ways to allow students to practice science and be scientists. The intro level courses |

Teel like upper-level courses and electives within the biology department do a great job of teaching and finding ways to allow students to practice science and be scientists. The intro level courses should try to replicate these practices. I think we will see higher student retention rates as well as students enjoying the classes more. The intro level courses seem to be nearly every biology student's least favorite part of the major.

None

• All the faculty members who were my professors did a wonderful job at being accessible and helping me get solid foundations.

| 3 - B. Advising         |             |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Availability of adviso  | r           |      |        |           |         |   |      |          |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 6         | 60.00%  |   |      |          |       |     | 4.40     |
| Satisfied               |             |      | (4)    | 3         | 30.00%  |   |      |          |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 0         | 0.00%   | ] |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 1         | 10.00%  |   |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   | 1 |      |          |       |     |          |
|                         |             |      |        |           |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.40        | 0.97 |        |           |         |   |      |          |       |     |          |

| 3 - B. Advising         |             |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Helpfulness of advise   | or          |      |        |           |         |   |      |          |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 6         | 60.00%  |   |      |          |       |     | 4.50     |
| Satisfied               |             |      | (4)    | 3         | 30.00%  |   |      |          |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   | 1 |      |          |       |     |          |
|                         |             |      | •      | •         |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.50        | 0.71 |        |           |         |   |      |          |       |     |          |

| Advisor's knowledge of requirem    | ents   |           |         |      |           |       |     |          |
|------------------------------------|--------|-----------|---------|------|-----------|-------|-----|----------|
| Response Option                    | Weight | Frequency | Percent | Per  | cent Resp | onses |     | Means    |
| /ery Satisfied                     | (5)    | 7         | 70.00%  |      |           |       |     | 4.60     |
| Satisfied                          | (4)    | 2         | 20.00%  |      |           |       |     |          |
| leither Satisfied nor Dissatisfied | (3)    | 1         | 10.00%  |      |           |       |     |          |
| Dissatisfied                       | (2)    | 0         | 0.00%   |      |           |       |     |          |
| /ery Dissatisfied                  | (1)    | 0         | 0.00%   |      |           |       |     |          |
| J/A                                | (0)    | 0         | 0.00%   |      |           |       |     |          |
|                                    |        |           |         | 0 25 | 50        | 75    | 100 | Question |

| 3 - B. Advising         |             |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Advisor's knowledge     | of my goals | ;    |        |           |         |   |      |          |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 7         | 70.00%  |   |      |          |       |     | 4.50     |
| Satisfied               |             |      | (4)    | 2         | 20.00%  |   |      |          |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 0         | 0.00%   |   |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 1         | 10.00%  |   |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   |   |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   |   |      |          |       |     |          |
|                         |             |      |        | · · ·     |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.50        | 0.97 |        |           |         |   |      |          |       |     |          |

| 3 - B. Advising         |             |      |        |           |         |   |     |          |         |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|-----|----------|---------|-----|----------|
| Professional school     | advising    |      |        |           |         |   |     |          |         |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Per | cent Res | sponses |     | Means    |
| Very Satisfied          |             |      | (5)    | 5         | 50.00%  |   |     |          |         |     | 4.22     |
| Satisfied               |             |      | (4)    | 2         | 20.00%  |   |     |          |         |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |     |          |         |     |          |
| Dissatisfied            |             |      | (2)    | 1         | 10.00%  |   |     |          |         |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   |   |     |          |         |     |          |
| N/A                     |             |      | (0)    | 1         | 10.00%  |   |     |          |         |     |          |
|                         |             |      |        |           |         | 0 | 25  | 50       | 75      | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |     |          |         |     |          |
| 10/10 (100%)            | 4.22        | 1.09 |        |           |         |   |     |          |         |     |          |

| 3 - B. Advising         |             |      |        |           |         |   |      |          |       |     |          |
|-------------------------|-------------|------|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Career advising         |             |      |        |           |         |   |      |          |       |     |          |
| Response Option         |             |      | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Very Satisfied          |             |      | (5)    | 7         | 70.00%  |   |      |          |       |     | 4.40     |
| Satisfied               |             |      | (4)    | 1         | 10.00%  |   |      |          |       |     |          |
| Neither Satisfied nor D | issatisfied |      | (3)    | 1         | 10.00%  |   |      |          |       |     |          |
| Dissatisfied            |             |      | (2)    | 1         | 10.00%  |   |      |          |       |     |          |
| Very Dissatisfied       |             |      | (1)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| N/A                     |             |      | (0)    | 0         | 0.00%   | 1 |      |          |       |     |          |
|                         |             |      |        |           |         | 0 | 25   | 50       | 75    | 100 | Question |
| Response Rate           | Mean        | STD  |        |           |         |   |      |          |       |     |          |
| 10/10 (100%)            | 4.40        | 1.07 |        |           |         |   |      |          |       |     |          |

 4 - Do you have any comments or observations about advising in the BIOL program?

 Response Rate
 3/10 (30%)

• I had two really great advisors in the biology department. They were crucial in helping me understand the requirements and helping me attain personal, academic, and career goals. • None

Outstanding faculty advisors

| 5 - C. Research          |            |       |        |           |         |   |      |         |        |     |          |
|--------------------------|------------|-------|--------|-----------|---------|---|------|---------|--------|-----|----------|
| Availability of researc  | h opportun | ities |        |           |         |   |      |         |        |     |          |
| Response Option          |            |       | Weight | Frequency | Percent |   | Perc | ent Res | oonses |     | Means    |
| Very Satisfied           |            |       | (5)    | 5         | 50.00%  |   |      |         |        |     | 4.40     |
| Satisfied                |            |       | (4)    | 4         | 40.00%  |   |      |         |        |     |          |
| Neither Satisfied nor Di | ssatisfied |       | (3)    | 1         | 10.00%  |   |      |         |        |     |          |
| Dissatisfied             |            |       | (2)    | 0         | 0.00%   | ] |      |         |        |     |          |
| Very Dissatisfied        |            |       | (1)    | 0         | 0.00%   | ] |      |         |        |     |          |
| N/A                      |            |       | (0)    | 0         | 0.00%   | 1 |      |         |        |     |          |
|                          |            |       |        |           |         | 0 | 25   | 50      | 75     | 100 | Question |
| Response Rate            | Mean       | STD   |        |           |         |   |      |         |        |     |          |
| 10/10 (100%)             | 4.40       | 0.70  |        |           |         |   |      |         |        |     |          |

| 5 - C. Research         |             |            |        |           |         |   |      |         |        |     |          |
|-------------------------|-------------|------------|--------|-----------|---------|---|------|---------|--------|-----|----------|
| Guidance for finding    | research op | portunitie | es     |           |         |   |      |         |        |     |          |
| Response Option         |             |            | Weight | Frequency | Percent |   | Perc | ent Res | oonses |     | Means    |
| Very Satisfied          |             |            | (5)    | 3         | 30.00%  |   |      |         |        |     | 4.30     |
| Satisfied               |             |            | (4)    | 7         | 70.00%  |   |      |         |        |     |          |
| Neither Satisfied nor D | issatisfied |            | (3)    | 0         | 0.00%   | 1 |      |         |        |     |          |
| Dissatisfied            |             |            | (2)    | 0         | 0.00%   | 1 |      |         |        |     |          |
| Very Dissatisfied       |             |            | (1)    | 0         | 0.00%   | 1 |      |         |        |     |          |
| N/A                     |             |            | (0)    | 0         | 0.00%   | 1 |      |         |        |     |          |
|                         |             |            |        |           |         | 0 | 25   | 50      | 75     | 100 | Question |
| Response Rate           | Mean        | STD        |        |           |         |   |      |         |        |     |          |
| 10/10 (100%)            | 4.30        | 0.48       |        |           |         |   |      |         |        |     |          |

### 6 - Do you have any comments or observations about research in the BIOL program?

### Response Rate 4/10 (40%)

• Research was a huge part o my experience in the BIOL program. All the projects I was involved in were found at UROM - I think UROM is awesome. It would be cool if students were also able to talk about their lab experiences during UROM.

None

Thanks to my advisor I was able to do an internship every year I was at Hendrix.

• I think overall it is very available, but I think that slightly more accessibility to the general population of Hendrix would be very helpful. It is on the communications, but since the UROM is only once a semester, making a bigger deal would be more helpful to those students that haven't been a part of research yet and may not know this is where to look.

### 7 - D. Overall

### Overall quality of BIOL program

| •••••••••••••••••••••••••••••••••••••• | - p. • g    |      |        |           |         |      |           |         |     |          |
|--|-------------|------|--------|-----------|---------|------|-----------|---------|-----|----------|
| Response Option                        |             |      | Weight | Frequency | Percent | Pe   | rcent Res | sponses |     | Means    |
| Very Satisfied                         |             |      | (5)    | 7         | 70.00%  |      |           |         |     | 4.70     |
| Satisfied                              |             |      | (4)    | 3         | 30.00%  |      | l i       |         |     |          |
| Neither Satisfied nor D                | issatisfied |      | (3)    | 0         | 0.00%   | 1    |           |         |     |          |
| Dissatisfied                           |             |      | (2)    | 0         | 0.00%   | 1    |           |         |     |          |
| Very Dissatisfied                      |             |      | (1)    | 0         | 0.00%   | 1    |           |         |     |          |
| N/A                                    |             |      | (0)    | 0         | 0.00%   | 1    |           |         |     |          |
|  |             |      |        |           |         | 0 25 | 50        | 75      | 100 | Question |
| Response Rate                          | Mean        | STD  |        |           |         |      |           |         |     |          |
| 10/10 (100%)                           | 4.70        | 0.48 |        |           |         |      |           |         |     |          |

| supports that unders   | anding. |        |           |         |   |       |          | -     |     |          |
|------------------------|---------|--------|-----------|---------|---|-------|----------|-------|-----|----------|
| Response Option        |         | Weight | Frequency | Percent |   | Perce | ent Resp | onses |     | Means    |
| Strongly Agree         |         | (5)    | 3         | 30.00%  |   |       |          |       |     | 4.30     |
| Agree                  |         | (4)    | 7         | 70.00%  |   |       |          |       |     |          |
| Neither Agree nor Disa | gree    | (3)    | 0         | 0.00%   |   |       |          |       |     |          |
| Disagree               |         | (2)    | 0         | 0.00%   | 1 |       |          |       |     |          |
| Strongly Disagree      |         | (1)    | 0         | 0.00%   | 1 |       |          |       |     |          |
| N/A                    |         | (0)    | 0         | 0.00%   | 1 |       |          |       |     |          |
|                        |         |        |           |         | 0 | 25    | 50       | 75    | 100 | Question |

|                          | science |  |        |           |         |   |      |          |       |     |          |
|--------------------------|---------|--|--------|-----------|---------|---|------|----------|-------|-----|----------|
| Response Option          |         |  | Weight | Frequency | Percent |   | Perc | ent Resp | onses |     | Means    |
| Strongly Agree           |         |  | (5)    | 6         | 60.00%  |   |      |          |       |     | 4.60     |
| lgree                    |         |  | (4)    | 4         | 40.00%  |   |      |          |       |     |          |
| leither Agree nor Disagi | ee      |  | (3)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| Disagree                 |         |  | (2)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| Strongly Disagree        |         |  | (1)    | 0         | 0.00%   | 1 |      |          |       |     |          |
| I/A                      |         |  | (0)    | 0         | 0.00%   | 1 |      |          |       |     |          |
|                          |         |  |        |           |         | 0 | 25   | 50       | 75    | 100 | Question |

| 8 - 1. As a result of m | y education  | as a BIO   | L major, I   | am able to:    |             |           |        |           |          |     |          |
|-------------------------|--------------|------------|--------------|----------------|-------------|-----------|--------|-----------|----------|-----|----------|
| Evaluate and critique   | scientific p | roducts (e | e.g. origina | al research, g | rant propos | al, revie | ew pap | per, theo | ory etc) |     |          |
| Response Option         |              |            | Weight       | Frequency      | Percent     |           | Per    | cent Res  | ponses   |     | Means    |
| Strongly Agree          |              |            | (5)          | 4              | 40.00%      |           |        |           |          |     | 4.40     |
| Agree                   |              |            | (4)          | 6              | 60.00%      |           |        |           |          |     |          |
| Neither Agree nor Disa  | gree         |            | (3)          | 0              | 0.00%       | 1         |        |           |          |     |          |
| Disagree                |              |            | (2)          | 0              | 0.00%       | 1         |        |           |          |     |          |
| Strongly Disagree       |              |            | (1)          | 0              | 0.00%       | 1         |        |           |          |     |          |
| N/A                     |              |            | (0)          | 0              | 0.00%       | 1         |        |           |          |     |          |
|                         |              |            |              |                |             | 0         | 25     | 50        | 75       | 100 | Question |
| Response Rate           | Mean         | STD        |              |                |             |           |        |           |          |     |          |
| 10/10 (100%)            | 4.40         | 0.52       |              |                |             |           |        |           |          |     |          |

| 8 - 1. As a result of my | - 1. As a result of my education as a BIOL major, I am able to: |           |            |             |             |    |      |         |        |     |          |  |  |  |
|--------------------------|---|-----------|------------|-------------|-------------|----|------|---------|--------|-----|----------|--|--|--|
| Implement the scienti    | fic process   | to develo | p testable | models and/ | or hypothes | es |      |         |        |     |          |  |  |  |
| Response Option          |   |           | Weight     | Frequency   | Percent     |    | Perc | ent Res | oonses |     | Means    |  |  |  |
| Strongly Agree           |   |           | (5)        | 4           | 40.00%      |    |      |         |        |     | 4.40     |  |  |  |
| Agree                    |   |           | (4)        | 6           | 60.00%      |    |      |         |        |     |          |  |  |  |
| Neither Agree nor Disa   | gree  |           | (3)        | 0           | 0.00%       | 1  |      |         |        |     |          |  |  |  |
| Disagree                 |   |           | (2)        | 0           | 0.00%       | 1  |      |         |        |     |          |  |  |  |
| Strongly Disagree        |   |           | (1)        | 0           | 0.00%       |    |      |         |        |     |          |  |  |  |
| N/A                      |   |           | (0)        | 0           | 0.00%       |    |      |         |        |     |          |  |  |  |
|                          |   |           |            |             |             | 0  | 25   | 50      | 75     | 100 | Question |  |  |  |
| Response Rate            | Mean  | STD       |            |             |             |    |      |         |        |     |          |  |  |  |
| 10/10 (100%)             | 4.40  | 0.52      |            |             |             |    |      |         |        |     |          |  |  |  |

| 8 - 1. As a result of m | y education  | as a BIOI   | _ major, I  | am able to: |              |          |        |           |        |          |                         |
|-------------------------|--------------|-------------|-------------|-------------|--------------|----------|--------|-----------|--------|----------|-------------------------|
| Produce and deliver     | clear and ef | fective ora | al and writ | ten communi | cations of b | iologica | al con | cepts and | discov | eries to | a variety of audiences. |
| Response Option         |              |             | Weight      | Frequency   | Percent      |          | Perc   | cent Resp | onses  |          | Means                   |
| Strongly Agree          |              |             | (5)         | 6           | 60.00%       |          |        |           |        |          | 4.50                    |
| Agree                   |              |             | (4)         | 3           | 30.00%       |          |        |           |        |          |                         |
| Neither Agree nor Disa  | igree        |             | (3)         | 1           | 10.00%       |          |        |           |        |          |                         |
| Disagree                |              |             | (2)         | 0           | 0.00%        | 1        |        |           |        |          |                         |
| Strongly Disagree       |              |             | (1)         | 0           | 0.00%        |          |        |           |        |          |                         |
| N/A                     |              |             | (0)         | 0           | 0.00%        |          |        |           |        |          |                         |
|                         |              |             |             |             |              | 0        | 25     | 50        | 75     | 100      | Question                |
| Response Rate           | Mean         | STD         |             |             |              |          |        |           |        |          |                         |
| 10/10 (100%)            | 4.50         | 0.71        |             |             |              |          |        |           |        |          |                         |

|                          |        | <b>JJ</b> | ciconnecteu | anu engage | with of | ner sci  | entific a | iscipiine | es, inclu | ding the growing role of interdisciplinarity in |  |
|--------------------------|--------|-----------|-------------|------------|---------|----------|-----------|-----------|-----------|---|--|
| Response Option          | Weight | Frequency | Percent     |            | Perce   | ent Resp | onses     |           | Means     |   |  |
| Strongly Agree           |        | <br>(5)   | 5           | 50.00%     |         |          |           |           |           | 4.50  |  |
| lgree                    |        | <br>(4)   | 5           | 50.00%     |         |          |           |           |           |   |  |
| leither Agree nor Disagr | ee     | <br>(3)   | 0           | 0.00%      | 1       |          |           |           |           |   |  |
| Disagree                 |        | (2)       | 0           | 0.00%      | 1       |          |           |           |           |   |  |
| Strongly Disagree        |        | <br>(1)   | 0           | 0.00%      | 1       |          |           |           |           |   |  |
| J/A                      |        | (0)       | 0           | 0.00%      | 1       |          |           |           |           |   |  |
|                          |        |           |             |            | 0       | 25       | 50        | 75        | 100       | Question  |  |

### 8 - 1. As a result of my education as a BIOL major, I am able to:

Relate skills and knowledge of biology to other disciplines in the liberal arts and evaluate the ways in which the life sciences interface with various aspects of our society, including ethics and governance.

| Response Option        |      |      | Weight | Frequency | Percent | Per  | cent Resp | onses |     | Means    |
|------------------------|------|------|--------|-----------|---------|------|-----------|-------|-----|----------|
| Strongly Agree         |      |      | (5)    | 6         | 60.00%  |      |           |       |     | 4.40     |
| Agree                  |      |      | (4)    | 2         | 20.00%  |      |           |       |     |          |
| Neither Agree nor Disa | gree |      | (3)    | 2         | 20.00%  |      |           |       |     |          |
| Disagree               |      |      | (2)    | 0         | 0.00%   |      |           |       |     |          |
| Strongly Disagree      |      |      | (1)    | 0         | 0.00%   |      |           |       |     |          |
| N/A                    |      |      | (0)    | 0         | 0.00%   |      |           |       |     |          |
|                        |      |      |        |           |         | 0 25 | 50        | 75    | 100 | Question |
| Response Rate          | Mean | STD  |        |           |         |      |           |       |     |          |
| 10/10 (100%)           | 4.40 | 0.84 |        |           |         |      |           |       |     |          |

9 - In a few words, elaborate on how your experience in the department has helped you see how the fields of biology are interconnected and engage with other scientific disciplines, including the growing role of interdisciplinarity in scientific research.

Response Rate 7/10 (70%)

• I like how my professors encourage us to think about how what we are learning impacts broader topics as well as broader audiences

• Looking at interdisciplinary research papers throughout different courses has helped me make connections between various disciplines including biology, chemistry, physics, statistics, and psychology.

• In almost every BIOL course, I have been able to link at least on topic to a different BIOL class or a class in another department. I have also been able to think about biology in other courses.

• My experience in the many varied disciplines of science, especially psychology, have led me to further appreciate the root importance of Biology in all social sciences

• I can say regarding other scientific fields definitely build on each other's theories, concepts, and foundations. I have been able to use my learning from my biology degree especially research in other fields and in that way they were interconnected the audience may have been different but that was about it.

• Taking a wide breadth of science classes at hendrix allowed me to get an introductory understanding to various chemistry and physics related principles that I then saw explained fundamental aspects of biological processes that occur in organisms.

• The number of classes that counted both as biol and other discipline code showed how interconnected biology is to all aspects of science

#### 10 - A. What do you think are the strengths of the BIOL major, as it is presently constructed?

#### · Really good for pre-vet or genetics

**Response Rate** 

• 1. Offering specific upper level courses to students so one can explore different niches of the field 2. Good assurance that BIOL students can get into any courses they need/want to take 3. Variety of lab techniques taught, and a variety of lab projects for students to partake in

· I think that the strengths of the BIOL major are the ecology classes

10/10 (100%)

· advising; variety of courses; research opportunities; lab courses staying current and applicable

• I think the order of the core courses is good, although sometimes it can be difficult trying to build upon information when switching disciplines. For example, cell biology is the first course taken and if you do not take genetics until second semester of your sophomore year then it can be difficult to truly build upon the foundational knowledge you have from cell. I also think the freedom to explore topics and disciplines as you please is great. The ability to focus on what I am interested in was crucial to my success here.

· The breadth of material available

• The strength of being a Biology Major at Hendrix is the flexibility the degree has I found myself able to take other courses outside my major while studying my major. I also found myself having overlap with other natural sciences and that was nice too. My foundations would get stronger because of it. I feel as if my degree has given me a well-rounded education. Some strengths the major offered me: competitive experiences (I would say I feel pretty good about my abilities because of the work I have had to do in my courses both in lab and field) Another strength would be the amount of literature reading, and research writing. It got more independent and more professional the higher we got in our upper electives and that makes me feel confident in my ability to do research, speak to audiences, and also be able to portray information to the scientific community.

• I think that the program offers the major aspects of biology and gives students access to gaining knowledge on these subjects. This allows students to have a good base for understanding many different subjects.

• The strengths of the department are the level of subject understanding required to do well in a class coupled with the availability of professors for continuous feedback and clear instructions. I consistently felt challenged, but not without resources available to me that could help.

• My ability to understand and write scientific papers greatly improves under this curriculum.

#### 11 - B. What improvements would you recommend to the BIOL major?

Response Rate 9/10 (90%)

· More environmental/ecology courses

• 1. Having a scientific writing course available to standardize the writing process for literature reviews and lab reports across different courses. 2. Making sure professors return assignments (I often encountered courses where I got few/no assignments back throughout the semester) 3. Introducing more courses that can satisfy different requirements (i.e. pysch+biology, biology+ethics, etc.) to aid in interdisciplinary learning 4. Review session for the BIOL major capstone exam

· -more ecology/evolution courses -an anatomy course that counts towards the major

• The biggest improvement I can think of is the teacher approach to assisting students. I often feel like, in the biology department, student's do not receive as much support as in other disciplines. The approach and attitude towards office hours and receiving help is different as opposed to other departments. In my humanities classes, professors often encouraged office hours and did so throughout the entirety of the year; they stressed the importance of coming to get help when needed and went the extra mile to provide extra support. While I feel that is true of several professors and faculty in the biology department, I feel that it is not as widely present as it could and should be.

#### More practical experience

• I would recommend adding a .25 credit course that is only on foundations for cell biology. I know cell biology was difficult for me because I came in with weak foundations, but if a foundations course was offered as a quarter credit I would take it to help me in my main course. I also would recommend having a course that offers summer internships within the course so students can apply what they learn in lab settings and this can help those who will need an undergraduate research odyssey (I know it would be hard to do but I think everyone would benefit from it and it can cut the barriers for those who may have issues with traveling restrictions due to their legal status or not being able to get funded).

• I think that the senior seminar needs some better structure. Depending on whoever is teaching the course, it is skewed towards their subject and those students who aren't as experienced are left behind during things like literature critiques. I also think that cell biology is not the most optimal subject to be the intro course for the BIOL major. I know multiple students who came into the college debating a biology major and were scared off at the cell biology course. While this is an important course to have, I think having a more wholistic course that gets students excited about the multiple different subjects in biology would help create a more inclusive major. I also think zoology could be potentially restructured into a different track of the major instead of being required, as it scares away many other students from being majors.

• Available classes have decreased over the past few years as have professors, so I just hope the department is able to find replacements for these professors.

None off the top of my head

#### 12 - C. Do you have any final comments or observations about your experience as a BIOL major at Hendrix?

#### Response Rate 8/10 (80%)

· Coming into Hendrix as a pre-med student, I wish there would be a clearer path/track for pre-med courses.

· Not really. I loved this department and the support that was given to me.

• I have loved being a part of this department. I have discovered new passions and grown immensely as a scholar. The best part of this department has been the faculty and my peers, and I'm sad to be leaving.

None

• I loved my experience in Biology and I am thankful for all my professors who were there to watch me grow and also contribute to my growth.

• I think that overall this major does a very good job at getting students ready for a career or professional school in biology by allowing upper level courses and research. This time in the major has greatly helped me and been able to prepare me for the future. I think with some restructuring of the first and last class of the major it would attract more people.

• I have enjoyed the the chance to get to know many of the professors in the department and feel my education has further solidified my future goals and my confidence in achieving them and so for that I am very grateful to everyone in this Biology department.

· Thank you hendrix for having such an amazing selection of classes and teachers

### 13 - Gender:Race:Overall GPA Range: 2.0-2.5 2.5-3.0 3.0-3.5 3.5-4.0

Response Rate 9/10 (90%)

Gender: Female Race: White Overal GPA range: 3.5-4.0

• 3.5-4.0

• Female White 3.5-4.0

- Male Black or African-American 3.5
- Male White 3.0-3.5
- Female 3.0-3.5
- Male White 3.5-4.0
- Male White 3.5-4.0
- 2.5-3.0

| 14 - Are you a first generation college student? |      |        |           |         |        |                   |    |    |    |       |          |
|--|------|--------|-----------|---------|--------|-------------------|----|----|----|-------|----------|
| Response Option                                  |      | Weight | Frequency | Percent |        | Percent Responses |    |    |    | Means |          |
| Yes  |      |        | (1)       | 2       | 20.00% |                   |    |    |    |       | 1.80     |
| No   |      |        | (2)       | 8       | 80.00% |                   |    |    |    |       | 1.80     |
| Prefer Not to Answer                             |      |        | (3)       | 0       | 0.00%  | 1                 |    |    |    |       |          |
|  |      |        |           |         |        | 0                 | 25 | 50 | 75 | 100   | Question |
| Response Rate                                    | Mean | STD    |           |         |        |                   |    |    |    |       |          |
| 10/10 (100%)                                     | 1.80 | 0.42   |           |         |        |                   |    |    |    |       |          |

| 15 - Are you a member o | of the LGE | BTQ comr | nunity? |           |         |   |       |         |       |     |          |  |
|-------------------------|------------|----------|---------|-----------|---------|---|-------|---------|-------|-----|----------|--|
| Response Option         |            |          | Weight  | Frequency | Percent |   | Perce | nt Resp | onses |     | Means    |  |
| Yes                     |            |          | (1)     | 4         | 40.00%  |   |       |         |       |     |          |  |
| No                      |            |          | (2)     | 6         | 60.00%  |   |       |         |       |     | 1.60     |  |
| Prefer Not to Answer    |            |          | (3)     | 0         | 0.00%   |   |       |         |       |     |          |  |
|                         |            |          |         |           |         | 0 | 25    | 50      | 75    | 100 | Question |  |
| Response Rate           | Mean       | STD      |         |           |         |   |       |         |       |     |          |  |
| 10/10 (100%)            | 1.60       | 0.52     |         |           |         |   |       |         |       |     |          |  |

16 - Think of the rungs of a ladder as representing where people stand in the United States. At the top of the ladder are the people who are the best off—those who have the most money, etc. At the bottom are the people who are the worst off—who have the least money, etc. Please choose a number representing the rung where you stand relative to other people in the United States.

| Response Option |      |      | Weight | Frequency | Percent |   | Per | cent Res | ponses |     | Means    |
|-----------------|------|------|--------|-----------|---------|---|-----|----------|--------|-----|----------|
| 1               |      |      | (1)    | 1         | 10.00%  |   |     |          |        |     |          |
| 5               |      |      | (5)    | 5         | 50.00%  |   |     |          |        |     | 5.50     |
| 6               |      |      | (6)    | 1         | 10.00%  |   |     |          |        |     |          |
| 7               |      |      | (7)    | 1         | 10.00%  |   |     |          |        |     |          |
| 8               |      |      | (8)    | 2         | 20.00%  |   |     |          |        |     |          |
|                 |      |      |        |           |         | 0 | 25  | 50       | 75     | 100 | Question |
| Response Rate   | Mean | STD  |        |           |         |   |     |          |        |     |          |
| 10/10 (100%)    | 5.50 | 2.01 |        |           |         |   |     |          |        |     |          |