SAINT LOUIS UNIVERSITY.

Program-Level Assessment: Annual Report

Program: Biology Ph.D.	Department: Biology
Degree or Certificate Level: Graduate	College/School: College of Arts & Sciences
Date (Month/Year): September 2023	Primary Assessment Contacts: L. Shornick, R. Wood
In what year was the data upon which this report is based collected? 2022-23	
In what year was the program's assessment plan most recently reviewed/updated? 2018	

1. **Student Learning Outcomes**
   Which of the program's student learning outcomes were assessed in this annual assessment cycle?

The programmatic Student Learning Outcomes adopted by the department's faculty in 2017 for the PhD in Biology are the following.

PhD. degree students will be able to:

1) Critically analyze primary literature articles by evaluating the scientific contributions of peer-reviewed publications in biology

2) Effectively communicate scientific ideas

3) Demonstrate professional integrity

4) Use appropriate instrumentation and analytical methods to collect data

5) Draw statistically valid conclusions from quantitative data

6) Design novel research that advances knowledge of their field

7) Conduct self-directed research

2. **Assessment Methods: Artifacts of Student Learning**
   Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

n/a

3. **Assessment Methods: Evaluation Process**
   What process was used to evaluate the artifacts of student learning, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and include them in/with this report.

In the past year (2022-23), we have not conducted programmatic assessment of the Student Learning Outcomes listed above. As mentioned in our 2021 assessment report, we had recognized a need to review and possibly revise our learning outcomes in light of our change and growth as a department. We had also found that our program assessment plan was difficult to implement and needed revision as well.
We therefore made a commitment to undergo a systematic review of our undergraduate education programs, instructional practices, culture of, and approaches to, assessment.
We were supported in this effort by PULSE (Partnership for Undergraduate Life Science Education), in the context of their national Recognition Program (https://pulse-community.org/recognition), an initiative designed to motivate

departments to implement change in accordance with the most recent national recommendations for undergraduate biology education (Vision and Change).

To prepare for a site visit by a team of PULSE fellows, we worked as a department to collect data about our UG educational programs, and conducted a self-evaluation study based on the PULSE Vision & Change Rubrics (described here, and available online at https://pulse-community.org/rubrics).

4. Data/Results

What were the results of the assessment of the learning outcome(s)? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

n/a

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

The PULSE recognition team visited our Department for 2 days in February 2023. They met with administrators, faculty, support staff and students, and visited lecture and lab courses. They analyzed the information we provided and combined it with their in-person observations. They later generated and shared with us a very thorough report offering their feedback on our department's strengths as well as opportunities for improvement.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

The PULSE recognition report was shared with the Department faculty at the end of SP23, and again at the beginning of the FL23 semester. Our priority for the 2023-24 AY is to continue discussing the report and to identify actionable goals for short-term and long-term change.

B. How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies	● Course content ● Teaching techniques ● Improvements in technology ● Prerequisites	● Course sequence ● New courses ● Deletion of courses ● Changes in frequency or scheduling of course offerings
Changes to the Assessment Plan	● Student learning outcomes ● Artifacts of student learning ● Evaluation process	● Evaluation tools (e.g., rubrics) ● Data collection methods ● Frequency of data collection

Please describe the actions you are taking as a result of these findings.

One of the areas of improvement identified by the report is our curriculum complexity, and potentially unnecessary bottlenecks built into the curriculum through pre-requisites.

An ad-hoc departmental committee (Curriculum Review Committee) has been working since 2022 to identify curricular complexities and bottlenecks, and we have already started implementing some strategic changes to simplify the curriculum. While some more immediately achievable changes have already been implemented (i.e., removing certain pre-requisites from required courses), the committee is still at work with the goal of further streamlining the curriculum.

If no changes are being made, please explain why.

N/A

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7. Closing the Loop: Review of <u>Previous</u> Assessment Findings and Changes

    A. What is at least one change your program has implemented in recent years as a result of assessment data?

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N/A
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    B. How has this change/have these changes been assessed?

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N/A
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    C. What were the findings of the assessment?

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N/A
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    D. How do you plan to (continue to) use this information moving forward?

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N/A
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IMPORTANT: Please submit any assessment tools and/or revised/updated assessment plans along with this report.