SAINT LOUIS UNIVERSITY.

Program-Level Assessment: Annual Report

Program Name (no acronyms): Biochemistry and Mol. Biol.	Department: Biochemistry and Mol. Biol.
Degree or Certificate Level: PhD	College/School: : School of Medicine
Date (Month/Year): 11/23	Assessment Contact: Tomasz Heyduk

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? 2022

Is this program accredited by an external program/disciplinary/specialized accrediting organization or subject to state/licensure requirements? no

If yes, please share how this affects the program's assessment process (e.g., number of learning outcomes assessed, mandated exams or other assessment methods, schedule or timing of assessment, etc.):

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please provide the complete list of the program's learning outcome statements and **bold** the SLOs assessed in this cycle.)

Last year was special, as BMB graduate program underwent University Academic Program Review (APR) that included review by the external reviewers. Since the entire program underwent comprehensive review and assessment, no specific student outcomes were assessed in 2022 as every aspect of the entire program was the subject of APR.

2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe the artifacts in detail, identify the course(s) in which they were collected, and if they are from program majors/graduates and/or other students. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

For the purpose of APR, BMB Training Committee prepared 56-page long Self-study of the BMB Graduate Program document, where we discussed strengths and weaknesses of all aspects of BMB program.

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 document** (please do not just refer to the assessment plan).

External reviewers used this document and the information collected during their on-site visit to prepare their Academic Program Review document.

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)?

The executive summary of external reviewers' comments is pasted below:

Executive Summary

The Edward A. Doisy Department of Biochemistry and Molecular Biology has an international reputation for scientific excellence. It has many strengths, including:

- An internationally recognized, highly productive faculty.

- Strong leadership from the Chair, who acts with a clear vision for the Department.

- Outstanding external funding from the National Institutes of Health, with the Department accounting for nearly 20% of all NIH funding in the School of Medicine.

- Outstanding resources provided by the Doisy Endowment and Institutional support.

- Outstanding infrastructure and instrumental resources.

- A well-organized and efficient graduate program, with a coherent curriculum and an excellent preliminary examination rubric for evaluating student progress.

We find that the graduate program is very strong. There are no serious concerns and no glaring weaknesses. Indeed, the outstanding resources of the Department can clearly support the expansion of the graduate program to provide a consistent incoming class of at least six new students every year. Such growth is essential for faculty recruitment and retention – highly active research programs need a constant influx of talent. Increased graduate student recruitment could be facilitated in several ways. First, direct recruitment of students to the Department (bypassing the Core Graduate Program) could be facilitated by amending Institutional policies concerning the number of allowable transfer credits in order to ease the support of masters-level recruits. Second, a phased transition of the Graduate Core Program from a two-year program to a single year, with no reduction in Institutional funding, would permit an eventual doubling of the number of incoming graduate students each year. Finally, the creation of dedicated transition pathways between SLU undergraduate programs (particularly Biomedical Engineering, Chemistry, and Physics) and the Departmental PhD program could be established.

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you? Address both a) learning gaps and possible curricular or pedagogical remedies, and b) strengths of curriculum and pedagogy.

External reviewers were very positive regarding organization of our program, coherent curriculum and excellent preliminary examination rubric. All external reviewers' suggestions for improving the program were centered around the issue of difficulties in student recruitment and growth of the program. While these comments do not directly concern student learning outcomes, indirectly recruitment and growth of the program will have an effect of learning outcomes.

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

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

Self-study document was prepared by BMB Training Committee and was sent to the entire faculty for comments. It was then further discussed at a faculty meeting. External reviewers' Academic Program Review document was sent to all faculty for comments and was further discussed at a faculty meeting.

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.

N/A

If no changes are being made, please explain why.

Since no suggestions for changes to the curriculum or pedagogies were made in the APR process, no changes are being made this year.

7. Closing the Loop: Review of Previous Assessment Findings and Changes

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

The changes into the teaching techniques in BCHM-6250 course.

B. How has the change/have these changes identified in 7A been assessed?

Improvement of the quality of written research proposals (as judged by the comments from Written Examination committees). Improvement of student performance at Oral Examinations (as judged by the grades received).

C. What were the findings of the assessment?

This is continuing assessment as the data from several years will be needed to make valid conclusions.

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

We will monitor student's performance in BCHM-6250 course yearly to determine if further tweaking of teaching techniques in this course might be needed.

IMPORTANT: Please submit any assessment tools (e.g., artifact prompts, rubrics) with this report as separate attachments or copied and pasted/appended into this Word document. Please do not just refer to the assessment plan; the report should serve as a stand-alone document. Thank you.