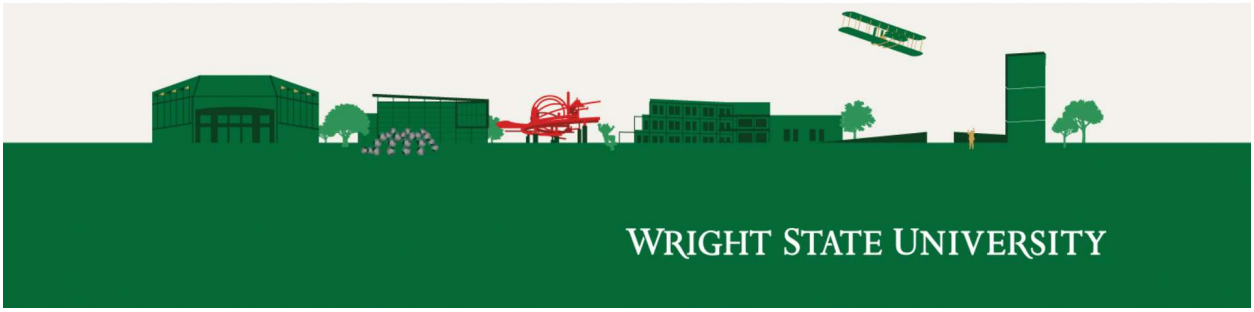
WRIGHT STATE UNIVERSITY Power Apps | Academic Program Assessment

WSU Program Assessment Report (PAR)

Each program must complete this report annually by December 31, reporting on assessment activities from the previous academic year.



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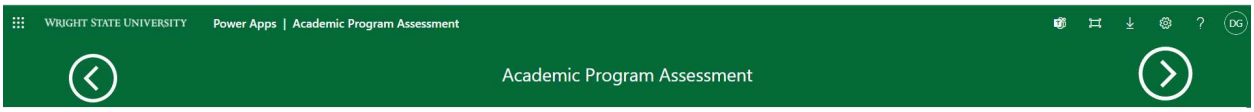
Academic Program Assessment

Choose the Program:

Program not Listed

- Accountancy (ACC) Baccalaureate Degree 2020-2021 Submitted
- Accountancy (ACC) Baccalaureate Degree 2019-2020 Submitted
- Accountancy (ACC) Baccalaureate Degree 2021-2022 Submitted
- Accountancy (ACC) Masters Degree 2021-2022 Submitted
- Accountancy (ACC) Masters Degree 2019-2020 Submitted
- Accountancy (ACC) Masters Degree 2020-2021 Submitted
- Acting (ACT) Baccalaureate Degree 2021-2022 Submitted
- Acting (ACT) Baccalaureate Degree 2020-2021 Submitted
- Acting (ACT) Baccalaureate Degree 2019-2020 Submitted
- Adolescence to Young Adult (AYA) & Mulit-Age Masters Degree 2020-2021 Submitted
- Adolescence to Young Adult (AYA) & Mulit-Age Masters Degree 2021-2022 Submitted
- Adolescence to Young Adult (AYA) & Mulit-Age Masters Degree 2019-2020 Draft
- Aerospace Systems Engineering (ASE) Masters Degree 2020-2021 Submitted
- Aerospace Systems Engineering (ASE) Masters Degree 2021-2022 Submitted
- Aerospace Systems Engineering (ASE) Masters Degree 2019-2020 Submitted



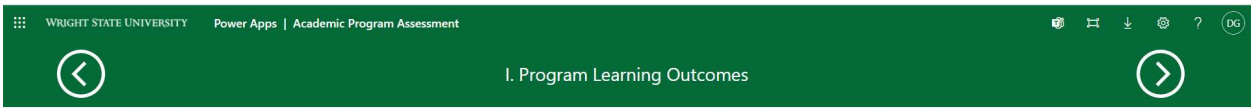
Program Name, Degree Name

Biochem + Molecular Biology (BMB) Masters Degree

Report prepared by

Long, Weiwen

Feedback



Program Learning Outcomes

Each program or major should have at least three measurable student learning outcomes (most programs will have more). Outcomes describe the knowledge, skills, and abilities that a student should attain by completing the degree program. Accredited programs should use the relevant elements of their accrediting body's standards as their learning outcomes.

Please note that due to specialized accreditation requirements, accredited programs may be required to assess and report on all program level student learning outcomes every year; accredited programs should report in a manner that will align with their accreditation. Programs not carrying specialized accreditation may assess all of their learning outcomes every year but may choose to report on 2-3 per year, looking at several years of data.

1. Graduates will be able to demonstrate mastery of a fundamental body of knowledge in biochemistry and molecular biology

2. Graduates will be able to apply biochemical knowledge towards problem solving

3. Graduates will be able to demonstrate the ability to communicate scientific knowledge effectively

II. Procedures Used for Assessment

How did you assess the degree to which students achieved your program learning outcomes?

Direct Assessment (Evaluation/Observation of Student Work)

For **each** learning outcome addressed by this report, state where and when data were collected (in a course, exam, or performance) and how they were evaluated (e.g. rubric, rating scale, key questions from exams, etc.). Specify the course or courses where students demonstrated the outcomes (if applicable) and the assignment(s) that you used for assessment purposes (e.g., capstone project, final examination, research paper, student presentation, performance, portfolio, etc.). If applicable, describe how student papers/works were selected and sample size. Please indicate how you assured that the data are representative. (NOTE: Supervisor's evaluation of student performance in a field/clinical/lab experience could also apply here if connections to the program learning outcomes are clearly indicated.)

1. Graduates will be able to demonstrate mastery of a fundamental body of knowledge in biochemistry and molecular biology

Direct Measure
The BMB MS Program Director distributes the "BMB MS Program Assessment Annual Report of Student Progress (ARoSP) " form to each faculty advisor for each MS student that has worked in their lab. The faculty advisor will complete the ARoSP and indicate how the student has progressed on the learning outcome. Item 1 of the ARoSP pertains to this outcome. The Program Director collects, analyzes and prepares a report of the ARoSP findings which is presented to the BMB Assessment Committee of the Whole (BMB ACW). The BMB ACW meets annually to review the assessment data and the director's report before the start of the academic year as part of the department annual faculty retreat.

See file "ARoSP form.pdf" under "Supporting Documents"

Direct Measure
The BMB MS Program Director distributes the "BMB MS Program Assessment Final Report of Student Progress (FRoSP) " form to each faculty advisor for each MS student that has graduated. The faculty advisor will complete the FRoSP and indicate how the student has progressed on the learning outcome. Item 1 of the FRoSP pertains to this outcome. The assessment item focuses on the finished student product (i.e.,thesis). The Program Director collects, analyzes and prepares a report of the FRoSP findings which is presented to the BMB Assessment Committee of the Whole (BMB ACW). The BMB ACW meets annually to review the assessment data and the director's report before the start of the academic year as part of the department annual faculty retreat.

See file "FRoSP form.pdf" under "Supporting Documents"

Direct Measure
Students further demonstrate their mastery of this outcome by their presentations of their work in the BMB Brown Bag Seminar Program. For every MS student presentation, all BMB faculty attending the presentation complete the "BMB MS Program Student Presentation Evaluation" form. The forms are collected and data compiled by the BMB office staff. The Program Director analyzes the data and prepares a report of the presentation evaluations to the BMB Assessment Committee of the Whole (BMB ACW). The BMB ACW meets

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II. Procedures Used for Assessment

Scoring of Student Work

For each learning outcome addressed by this report, describe how you scored students' level of performance of the outcomes. For example, did you use a rubric, rating scale or answer key, or was it scored by a testing company? Who did the scoring?

1. Graduates will be able to demonstrate mastery of a fundamental body of knowledge in biochemistry and molecular biology.

The scoring is done primarily by the M.S. student's advisor (Items A. and B., directly below) or the entire BMB faculty (Item C., directly below), as follows, on our assessment forms

A. The BMB MS Program Director distributes the "BMB MS Program Assessment Annual Report of Student Progress (ARoSP) " form to each faculty advisor for each MS student that has worked in their lab. The faculty advisor will complete the ARoSP and indicate how the student has progressed on the learning outcome. Item 1 of the ARoSP pertains to this outcome. The Program Director collects, analyzes and prepares a report of the ARoSP findings which is presented to the BMB Assessment Committee of the Whole (BMB ACW). See file "ARoSP form.pdf" under "Supporting Documents"

B. The BMB MS Program Director distributes the "BMB MS Program Assessment Final Report of Student Progress (FRoSP) " form to each faculty advisor for each MS student that has graduated. The faculty advisor will complete the FRoSP and indicate how the student has progressed on the learning outcome. Item 1 of the FRoSP pertains to this outcome. The assessment item focuses on the finished student product (i.e.,thesis). The Program Director collects, analyzes and prepares a report of the FRoSP findings which is presented to the BMB Assessment Committee of the Whole (BMB ACW). See file "FRoSP form.pdf" under "Supporting Documents"

C. Students further demonstrate their mastery of this outcome by their presentations of their work in the BMB Brown Bag Seminar Program. For every MS student presentation, all BMB faculty attending the presentation complete the "BMB MS Program Student Presentation Evaluation" form. The forms are collected and data compiled by the BMB office staff. The Program Director analyzes the data and prepares a report of the presentation evaluations to the BMB Assessment Committee of the Whole (BMB ACW). See file "BMB MS Program Student Presentation Evaluation Form-final.pdf" under "Supporting Documents"

2. Graduates will be able to apply biochemical knowledge towards problem solving.

The scoring is done primarily by the M.S. student's advisor (Items A. and B., directly below) or the entire BMB faculty (Item C., directly

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II. Procedures Used for Assessment

Indirect Assessment (Perceptions of Student Learning)

For each learning outcome addressed by this report, describe how you indirectly assessed student or alumni perceptions of their learning in relation to the outcome (e.g., course evaluations, focus groups with graduating students, exit survey, alumni survey, etc.).

TIP - An easy way to do an indirect assessment of all your learning outcomes is to give your graduating students a list of your program learning outcomes and have them rate the degree to which they feel they have mastered each outcome. Additional questions may include "what aspects of your education in the program helped you achieve each program learning outcome?" and "what might the program faculty do differently to help you learn more effectively?"

1. Graduates will be able to demonstrate mastery of a fundamental body of knowledge in biochemistry and molecular biology

Indirect Measure
An indirect measure of the outcome is obtained by student completion of the "BMB MS Program Student Questionnaire". The BMB MS Program Director distributes the exit questionnaire to each graduating student. The Program Director collects, analyzes and prepares a report of the Exit Questionnaire findings which is presented to the BMB Assessment Committee of the Whole (BMB ACW). The BMB ACW meets annually to review the assessment data and the director's report before the start of the academic year as part of the department annual faculty retreat.

See file "BMB MS Exit Questionnaire.pdf" under "Supporting Documents"

2. Graduates will be able to apply biochemical knowledge towards problem solving

Indirect Measure
An indirect measure of the outcome is obtained by student completion of the "BMB MS Program Student Questionnaire". The BMB MS Program Director distributes the exit questionnaire to each graduating student. The Program Director collects, analyzes and prepares a report of the Exit questionnaire findings which is presented to the BMB Assessment Committee of the Whole (BMB ACW). The BMB ACW meets annually to review the assessment data and the director's report before the start of the academic year as part of the department annual faculty retreat.

See file "BMB MS Exit Questionnaire.pdf" under "Supporting Documents"

3. Graduates will be able to demonstrate the ability to communicate scientific knowledge effectively

Indirect Measure
An indirect measure of the outcome is obtained by student completion of the "BMB MS Program Student Questionnaire". The BMB MS Program Director distributes the exit questionnaire to each graduating student. The Program Director collects, analyzes and prepares a

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III. Assessment Results/Information

What did you find from your assessments? What did your data reveal about how well students are achieving the Program Learning Outcomes that you listed above? After analyzing your data, present a summary of the data, clearly indicating what any numbers represent (e.g. percentages? means? medians?). Please number each corresponding assessment, summary, and analysis.

Assessment

Outcome 1. Graduates will be able to demonstrate mastery of a fundamental body of knowledge in biochemistry and molecular biology.
Assessment tools ARoSP, FRoSP, and MS Program Student Presentation Evaluation (See V. Supporting Documents)

Outcome 2 Ability to apply biochemical knowledge towards problem solving.
Assessment tools ARoSP, FRoSP, and MS Program Student Presentation Evaluation (See V. Supporting Documents)

Outcome 3 Ability to communicate scientific information effectively.
Assessment tools ARoSP, FRoSP, and MS Program Student Presentation Evaluation (See V. Supporting Documents)

Summary and Analysis in Relation to Learning Outcome and Indicators

Summarized findings for Outcome 1 Based on analysis of the data from the assessment tools (A-RoSP and R-RoSP forms) and discussion of the data by the BMB faculty (as the BMB ACW at the Annual BMB 2022 retreat), there was agreement that our students continue to make excellent progress regarding this outcome overall and in each of the five Outcome 1 subcategories assessed.

Summarized findings for Outcome 2 The assessment data and the BMB ACW discussion indicated that all Outcome 2 subcategories have been achieved and that the majority of students are performing with a high level of proficiency for this outcome.

Summarized findings for Outcome 3 There are four subcategories for this Outcome. The BMB ACW agreed that all four Outcome 3 subcategories were achieved. Enhancements (e.g., abstract requirement) to the weekly BMB Brown Bag research presentation program are to be continued. The BMB M.S. Program Student Presentation Evaluation form data has provided us with quantitative data that clearly demonstrates a marked improvement in presentation skills by every graduating M.S. student (based on comparison of evaluations of their initial departmental presentation as compared to their thesis defense talk). See V. Supporting Documents.

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IV. Actions: Information Sharing and Changes

(Discussion of assessment of student learning during at least one faculty meeting per year is recommended. Discussion with stakeholders should include appropriateness of program learning outcomes, performance of program graduates, and program responsiveness to regional, state, national, and societal needs.)

Actions Taken to Improve Student Learning

Describe how you shared the results with faculty and other stakeholders. Explain briefly how program faculty will make improvements based upon the assessment findings (e.g. plans to gather more information; changes to the learning outcomes or assessment procedures; changes in course content, instructional approaches, technology, order of course offerings, materials, resources, assignments, policies, funding, advising, planning, training for adjuncts, etc.).

Provide updates on any strategies for improvement you noted in previous years' assessment reports to gauge their effectiveness.

Describe how and with whom the results were shared
Data from the completed the A-RoSP, F-RoSP, and student presentation forms was analyzed by the Program Director in preparation for consideration by the BMB Assessment Committee of the Whole (BMB ACW). The BMB M.S. program director coordinates the assessment process through the distribution of the A-RoSP/F-RoSP forms and subsequent analysis of the resulting data. At the annual BMB Faculty Retreat held in the Fall 2022, the entire BMB faculty participated in the assessment process acting as the BMB Assessment Committee of the Whole (BMB ACW). Dr. Weiwen Long (Program Director) presented the formal report on the M.S. Program using the collected assessment data and led the discussion of the program. The entire BMB faculty (BMB ACW) evaluates, discusses and makes program recommendations during the annual BMB retreat.

What changes were made to the curriculum based on the assessment?
Following the program discussion by the faculty at the 2022 BMB retreat, the one action item of improvement for the coming year was for the Program Director to ensure that all second year students have their initial committee meeting before Fall semester of year 2. This will help ensure all students are on track in their thesis research. Given the overall excellent rating for all assessment categories the BMB ACW did not recommend curriculum changes (thesis or non-thesis track) based on the yearly program assessment.data. Monitoring of the program through our assessment instruments will be continued as in past years. The new abstract writing requirement initially implemented for 2017-18, which had a goal of enhancing student writing and communication skills, continues to be highly successful and will be continued permanently.

The assessment plan was fully implemented for the 2021-2022 academic year. No changes were made to the assessment plan.

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V. Supporting Documents

Please attach the following:

A. Minutes of meetings (program faculty, stakeholders, etc.) where discussion of results and action planning occurred and any other relevant documents.

B. If you administer a survey to graduating students, please attach a copy of the survey tool that you use. The university currently administers a university-wide survey at the point of application for graduation up to 6 months after graduation and would like to better understand what surveys graduating students may be receiving from their programs or colleges.

Attachments

- 2021-2022 BMB MS AROSP and FROSPs.pdf
- 2021-2022 BMB MS Program Report-faculty retreat.pdf
- ARoSP from.doc
- BMB MS Exit Questionnaire-2021-2022.pdf
- BMB MS Program Student Presentation Brown Bag-Thesis Evaluations 2021-2022.pdf
- FRoSP form.doc

Submit the Completed Program Assessment