

# **Weber State University, Department of Microbiology, Faculty Response to 2018–19 Program Review**

**Review Date:** March 26–27, 2019

The Department of Microbiology thanks the program review for their detailed and constructive feedback regarding the Strengths, Areas of Improvement, and Recommendations for standards A–H. We will address each of the standards below. There are four areas that we found particularly important: preparing students for the workforce, helping students move efficiently towards graduation, research capacity, and faculty workload.

## **Standard A. Mission Statement**

The Review Team found the Microbiology curriculum to be well-thought-out and to have a strong set of core courses as well as excellent electives for the students to choose. The courses support the mission and goals of the Department, which has been formalized in a strategic plan. Each course is aligned with broad goals and specific learning outcomes. The learning goals were developed by the Department using the American Association for the Advancement of Science Vision and Change document and the American Society for Microbiology Undergraduate Curriculum Guidelines.

We agree with the Review Team’s recommendation that more work needs to be done regarding closing the loop on assessment and sharing information regarding best practices among faculty teaching the same or similar courses. We plan to accomplish this by including it as an action item in our strategic plan. This plan will be to devote some of our department meeting time for the task of assessing one or two specific outcomes and how they will be accomplished in the courses that applies to our curriculum map. This will take several semesters; the timeline will be delineated in the strategic plan.

## **Standard B. Curriculum**

The Review Team found the Microbiology faculty have been compliant with the General Education revitalization effort on campus and designed their General Education courses around a Big Question and Signature Assignment. The Review Team thanked the department for supporting innovative general education courses. They suggested perhaps rebranding the MICR 1153 (Introduction to Public Health) course so that it would appeal to a wider audience and attract more students to the College of Science and the Department. We agree that updating the course descriptions and working with department advisors from other colleges may help attract a wider audience and bring more students into the College of Science. We support the Review Team’s recommendation that the department could do a better job developing a more uniform vision regarding the learning outcomes for MICR 1113 and MICR 1153 so that the course learning

outcomes are more similar within the same or different semesters. This will be addressed in an action item in our new strategic plan.

They complimented the department for a well-thought-out set of Microbiology major core courses and offering a variety of electives that are well-suited for the department's emphases/concentrations in Public and Environmental Health, Medical Microbiology, and Industrial Microbiology and Biotechnology. The newly established A.S. in Biology offers a 2+2 curriculum design to guide students through the lower division prerequisites. In the past, many student chose the general studies A.S. and often took courses that did not prepare them for a bachelor's degree in the College of Science.

The Review Team also suggested that addressing the frequency, and format, of course offerings to ensure we meet course capacity demands in the future. Currently, the average time to graduation for Microbiology is 5.67 years, which is lower than the College and University averages. However, enrollment trends indicate that our current capacity in some courses may not be sufficient into the near future. This may cause further delays to graduation. We plan to examine this issue and determine if it is feasible and beneficial to offer MICR 4054 and MICR 4154 in both fall and spring. The Review Team also suggested offering more independent research credit (MICR 4800) towards degree completion. This would allow students to begin independent research earlier in their course plan. The benefit to students would be increased opportunity to present their findings at conferences or local meetings. There is great value in this plan but issues with teaching load and credit for mentoring students would have to be addressed. The Review Team singled out MICR 3053 as possibly being redundant in content. We will examine the issue, however it's also possible that students delay taking MICR 3053 when it is recommended to be taken early in their academic course plan.

We agree with the recommendation that more support is needed for the MICR 2054 course, especially in the large 32-student laboratory sections. This could come in the form of teaching assistants and student instructors for credit. They suggested the College of Science consider revising workload policies regarding credit for laboratory courses and undergraduate research mentoring. We feel as a department we are at capacity regarding providing opportunities for students to do undergraduate research so we support looking at new options that support the recognized value of undergraduate research as a high impact teaching practice.

### **Standard C. Student Learning Outcomes & Assessments**

The previous department five-year strategic plan established an assessment grid with learning outcomes and timeline for assessing them. However, we agree with the Review Team that a concerted effort by the department is needed to "close the loop" on assessment. We are currently revising our strategic plan and it will include an assessment timeline to review all the learning outcomes. We agree more conversations are needed in the department to develop a workable

plan. We plan to take advantage of campus resources and ask for additional support if needed. The Review Team suggested a good plan would be to focus on one learning outcome per year and include an exit survey for seniors designed to assess the learning outcome. Specifically, we intend to devote department meeting time to develop a common rubric to assess outcomes for both our upper and lower division courses. This will be outlined in our new five-year strategic plan.

The laboratory courses are regarded as strength by the Review Team. The Review Team also found that the faculty do not receive sufficient credit (TCHs) for teaching and designing lab courses. The Department is in support of addressing these issues at the administrative level.

#### **Standard D. Academic Advising**

The department was complimented on our centralized advising and the willingness of all faculty to informally advise students about career paths. Advising is critical but also time consuming and we appreciate the Review Team's support for release time as well as suggestions for additional strategies such as student peer-to-peer advising (possibly through the Microbiology Club) and development of an advising handbook. They also agree that the new A.S. in biology will help students meet the requirements for a bachelor's degree in the College of Science.

#### **Standard E. Faculty**

The department does share the concern regarding support for new faculty being able to sustain a robust research program under the current workload model. The department is committed in its support for research and these concerns have been relayed to the administration. Recent meetings within the College of Science suggest these concerns will be addressed. We agree with the Review Teams recommendation to increase faculty diversity to reflect the diversity in the student population. The department also agrees to promote professional development and increase the mentoring of new faculty. We plan to increase the opportunities for classroom observations to evaluate teaching. The Review Team suggested a department retreat would be a good way to begin the process of addressing these issues around professional development, curriculum, and mentoring. We agree with the Review Team that a new faculty line is appropriate for the Department especially with regard to providing research opportunities for more undergraduates.

#### **Standard F. Program Support**

We agree with the Review Team that the Department needs to address the research space issue especially with regards to new faculty hires that have a strong research agenda. Retaining faculty that are great teachers and researchers is a priority for the Department and needs to be a priority for the College of Science and the University if we are to lead the field.

We agree with the Review Team that the Department needs to continue to support staff development and staff retention. The Department has two outstanding staff members. Our

Administrative Assistant and our Laboratory Manager. We agree with the Review Team that the Department needs to continue support staff professional development and support. Staff will be encouraged to apply for professional development grants to attend conferences. However, in order to address the demands of the positions the administrative assistant position needs to become full time and both staff positions need salary increases.

### **Standard G. Relationships with External Communities**

Establishing internships provides additional opportunities that prepares students for the workforce and it is and will continue to be a part of the strategic plan for the Department. The feasibility of providing an opportunity for internship or similar experience for every student (through Capstone experience) is a worthy goal for the department. The Build Dairy program is excellent example of a successful partnership. We will continue to work with our advisory board to build relationships with companies in the area, alumni who may be able to assist us, and new relationships such as with Hill Air Force Base.

### **Standard H. Program Summary**

The Program Review Team's report emphasized that the Department of Microbiology continues to maintain a balance between teaching excellence and a strong research agenda. Undergraduate research opportunities and laboratory experiences are highlights of our department as is student success following graduation. We have made changes to our curriculum to help recruit students and to help them navigate the major successfully. The A.S. in Biology shows our commitment to collaborate with the Departments in College of Science, but more importantly it serves the needs of students to efficiently move from lower division course to the upper division in preparation for a bachelor's degree.

We have identified four main areas from the report to focus on in the near future. These are discussed above, and summarized below.

1. Prepare students for the workforce:
  - a. Leverage the AS in Biology to recruit students to the microbiology major and help them navigate their early coursework.
  - b. Develop certificate-level programs to support local industries.
  - c. Build stronger community connections to help identify internships, research, and employment opportunities for students.
  - d. Review course objectives, laboratory skills, and course offerings to make the curriculum more efficient.
  - e. "Close the loop" on assessment through departmental discussions at department meetings.
2. Efficiency toward graduation
  - a. Evaluate the need for additional sections of high demand courses

- b. Investigate alternative schedules or formats for course offerings
  - c. Provide student support through TAs or SIs to provide more attention to struggling students
- 3. Increase research capacity
  - a. Look for opportunities to increase research space
  - b. Strategically hire new faculty with an interest in undergraduate research opportunities
- 4. Faculty workload
  - a. Work through the College to develop a workload model that includes more credit for laboratory courses.
  - b. Hire additional faculty.

The Department is committed to maintaining that important balance between a strong research agenda and teaching excellence. The final version of the 2019–2024 Strategic Plan will be available in June 2019.