

## Biology Program Review

Rubric Evaluation	Christina Rotsides (Same Division Faculty)	Geoff Mathews (Faculty At-Large)	Jackie Lauese (Staff At-Large)	Ram Subramaniam (Administrator)
<b>A. Program Information</b>				
<b>Program Mission Statement</b>				
<b>How many criteria are met for the Program Mission statement?</b>	Addresses 4 to 7 of the criteria - Needs Some Improvement to Meet the Standard	Addresses all 8 criteria - Meets the Standard		Exceeds expectations for all 8 criteria - Excellent
<b>Reader Feedback</b>	I really like the mission statement, and you're likely close to a word limit but it would be good to include what degrees are offered and what types of classes (lec and lab) are used to meet the goals laid out. There no explicit mention of "who the students/stakeholders are" but the mission statement is definitely student-centered.	N/A		N/A
<b>Program Learning Outcomes</b>				
<b>Overall, this section:</b>	Addresses 2 or fewer of the criteria - Needs Major Improvement to Meet the Standard	Addresses 3 to 4 of the criteria - Needs Some Improvement to Meet the Standard		Addresses all 5 criteria - Meets the Standard
<b>Reader Feedback</b>	I think the PLOs will hit all of the criteria with a few	The PLOs don't address non-majors. Are learning		N/A

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	<p>changes. One suggestion is to use more specific verbs. For example "use the scientific method" is vague and students might not know what "[applying] evolutionary theory" means. I liked the list "molecular, cellular, organismal, and population levels" because it gives students a good survey of what to expect in their coursework. The phrase "prepares students to use" makes the PLO not-measurable (I think). While the first PLO is very important, it's not specific to biology, a third PLO or adding specifics may help.</p>	<p>objectives the same for general education, or have different depth? (this is what makes me wonder about the "levels of learning" criteria) I'm not sure that students entering the program would understand these PLOs (graduating, yes, of course they would!) - for example, there is little awareness in the general populace regarding what is a hypothesis, or what does it mean to critically evaluate something. But I'm not sure how to rewrite these in broadly understandable terms... "potential explanations" and "identify strengths and weaknesses in example uses of the scientific method"?</p>		

### B. FTES - Enrollment Trends

<p><b>1. What does the FTES data trend indicate?</b></p>	<p>FTES has improved over the time span - Excellent</p>	<p>FTES has improved over the time span – Excellent</p>		<p>FTES has improved over the time span - Excellent</p>
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<b>FTES Narrative Explanation - <i>Discuss the factors that would help the college understand these trends and whether there are tangible reasons for no change/flat, an increase or decrease in the trend.</i></b>				
<b>Overall, in this section:</b>	The narrative includes fewer than 3 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes fewer than 3 of the criteria - Needs Major Improvement to Meet the Standard		The narrative includes all 4 of the criteria - Meets the Standard
<b>FTES Action Narrative (if applicable) - <i>Describe the proposed actions for stabilizing/increasing the FTES.</i></b>				
<b>Overall, in this section:</b>	The narrative is not included	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard		The narrative includes all 5 of the criteria - Meets the Standard
<b>Reader Feedback</b>	The biology department is doing great work and their FTES has increased. The items that I did not check off on the rubric were not explicitly mentioned in the narrative (I personally don't think they all need to be) but we're following the rubric! The bio department can brag a bit more about their great work to meet the criteria :). One suggestion-scheduling is mentioned and although challenging coordinating with other departments	- reason given is external - the increasing demand for allied health workers. This may be a sufficient explanations, but the rubric asks about items within department control.  - there was no discussion of the program size. Again, I'm not sure it's necessary, but that is a rubric item.		N/A

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	<p>within the division to appropriately schedule courses taken simultaneously by many students, or within a new guided pathway, will help even more.</p>	<ul style="list-style-type: none"><li>- are there any courses themed specifically towards allied health, and if so, do they show a greater increase than courses aimed at biology in general or courses targeting general education? This would support the idea that the increased FTES is driven by demand for health professions.</li><li>- is there any information addressing impact of equity-oriented pedagogy on enrollment, such as students reporting having had courses recommended to them by friends?</li><li>- While the continued offering of courses at a variety of times seems sensible, no data is presented to support this strategy. The 2018 budget cut induced drop in FTES is</li></ul>		

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		a good argument for this case - the percentage drop in FTES almost exactly matches the percentage drop in sections.		
<b>C. Sections - Enrollment Trends</b>				
<b>Section Narrative Explanation (If Applicable) - <i>Explain why the number of sections is flat, increased or decreased.</i></b>				
<b>Overall, in this section:</b>	The narrative exceeds expectations – the narrative could be used as an exemplar - Excellent	The narrative includes all 4 of the criteria - Meets the Standard		The narrative includes all 4 of the criteria - Meets the Standard
<b>Section Narrative Explanation (If Applicable) - <i>Explain why the number of sections increased while FTES decreased.</i></b>				
<b>Overall, in this section:</b>	The narrative is not included	The narrative is not included		The narrative includes all 3 of the criteria - Meets the Standard
<b>Reader Feedback</b>	The rubric calls for some numbers to be thrown into the narrative. The narrative is good, and I appreciated the explanation of the anomaly year and the realistic assessment of the last school year.	N/A		N/A

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<b>D. Productivity - Enrollment Trends</b>				
<b>1. What does the data indicate about the productivity trend?</b>	The program productivity trend has increased or has reached its maximum - Excellent	The program productivity trend has increased or has reached its maximum - Excellent		The program productivity trend has increased or has reached its maximum - Excellent
<b>Productivity Narrative Explanation (If Applicable) - Explain why the productivity is flat, increased or decreased.</b>				
<b>Overall, in this section:</b>	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>Productivity Action Narrative (If Applicable) - Describe the proposed actions for stabilizing/increasing the productivity number.</b>				
<b>Overall, in this section:</b>	The narrative is not included	The narrative is not included		The narrative includes all 5 of the criteria - Meets the Standard
<b>Reader Feedback</b>	It is certainly true that the 100% online course offerings affected productivity but the decision to teach fully online was not made by the department. The department did, however, decide to offer more sections given the newfound flexibility.	Technically, the reasons given for explaining productivity trends - budget and pandemic - are outside of the department's control. So, on this technicality, I have to rank them as meeting only 2 of the narrative criteria, despite these two external effects being sufficient to explain the trend.		N/A

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<b>E. Enrollment by Student Demographics</b>				
<b>a. Enrollment by Gender</b>				
<b>Enrollment by Gender Narrative Explanation - <i>Explain why the enrollment rates is flat, increased or decrease for male, female, or non-binary.</i></b>				
<b>Overall, in this section:</b>	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>2. Does your program differ in the percentage of males to females, in this most recent year, compared to the College?</b>	The difference between the gender/sex is between 11% to 20% - Meets the Standard	The difference between the gender/sex is greater than 30% - Needs Major Improvement to Meet the Standard		The difference between the gender/sex is between 21% to 30% - Needs Some Improvement to Meet the Standard
<b>(College 2020-21 = 52%Female, 46% Male)</b>				
<b>Enrollment by Gender Action Narrative (If Applicable) - <i>What is the source of gender disparity and what proposed/planned actions is the program taking to achieve parity?</i></b>				
<b>Overall, in this section:</b>	The narrative is not included	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard		The narrative includes all 5 of the criteria - Meets the Standard
<b>3. What does the data trend indicate about enrollment (headcount) by gender of declared majors in the program?</b>	The Gender gap by declared major is greater than 30% - Needs Major Improvement to Meet the Standard	The Gender gap by declared major is greater than 30% - Needs Major Improvement to Meet the Standard		The Gender gap by declared major is between 21% and 30% - Needs Some Improvement to Meet the Standard

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<b>Reader Feedback</b>	<p>Although there is a large difference between female and male enrollments (overall and for declared majors) the reason for the trend was explained and compared to trends nationwide. The narrative did a good job of explaining these trends. I checked "the narrative was not included" for the action narrative because what was in that box appeared to be a continuation of the explanation narrative. No action is needed considering the consistency of the department's trends as compared to comparable programs.</p>	<ul style="list-style-type: none"> <li>- The rubric's stance is that the gender gap of greater than 30% is a major problem. However, as the review writer notes, the gender gap in biology is a long-standing feature in our society - this is a case of women overwhelmingly taking advantage of an opportunity that men are leaving on the table.</li> <li>- As with many other items in the rubric, the external factors are likely sufficient to explain the gender gap</li> <li>- The review does not suggest any actions to take to reduce the gender gap.</li> </ul>		N/A
<b>b. Enrollment by Ethnicity</b>				
<b>Does your program differ in enrollment distribution among ethnic groups, in this most recent year, compared to the College</b>	<p>The enrollment mirrors the college's ethnic distribution or the program has explained why the distribution is</p>	<p>The enrollment mirrors the college's ethnic distribution or the program has explained why the distribution is</p>		<p>The enrollment mirrors the college's ethnic distribution or the program has explained why the distribution is</p>

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enrollment by ethnic group?	appropriate - Meets the Standard	appropriate - Meets the Standard		appropriate - Meets the Standard
<p>(College 2020-21 = 5% African American, 28% Asian, 5% Filipinx, 28% Latinx, 1% Native American, 1% Pacific Islander, 29% White, 4%Decline to State)</p>				
<p><b>Enrollment by Ethnicity Narrative Explanation (If Applicable) - <i>Explain changes identified over the past five years for each ethnic group (address each ethnic group by bullet point).</i></b></p>				
<b>Overall, in this section:</b>	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<p><b>Enrollment by Ethnicity Action Narrative (If Applicable) - <i>Describe the proposed actions for addressing disparities in enrollment by ethnic group within the program.</i></b></p>				
<b>Overall, in this section:</b>	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard		The narrative includes all 5 of the criteria - Meets the Standard
<b>Reader Feedback</b>	I think some of the boxes in the original Program Review are incorrectly checked so I'd advise the writer to review those. I interpreted section E, subsection b as a the enrollments by	- There are a couple of mistakes in the checkboxes for enrollment by Ethnicity. The enrollment rate for African Americans slightly increased, not		N/A

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	demographic within the program (and not compared to college demographics). Using that interpretation and comparing AY 16/17 to 20/21 African American enrollment has actually increased (not decreased), Asian enrollment has decreased (not increased), and declined to state has decreased. The action plan is good and I think the program is doing a great job in this area overall!	decreased (from 3 to 4%). Asian slightly decreased (32 to 31%). Decline to state slightly declined (3 to 1%)  - No data is presented to support the suggested actions for increasing enrollment by African American students. However, I'm not sure what kind of data exists or could be used here, so I'm not able to make a suggestion.		
<b>F. Student Course Success</b>				
<b>a. Student Course Success</b>				
<b>1. What does the data trend indicate about overall course success?</b>	Course success has improved over the time span – Excellent	Course success has improved over the time span - Excellent		Course success has improved over the time span - Excellent
<b>Student Course Success Narrative Explanation - <i>If the data trend shows an increase, decrease, or no change in students' course success percentage, explain what programmatic factors led to such a trend.</i></b>				
<b>Overall, in this section:</b>	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes all 3 of the criteria - Meets the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>Student Course Success Action Narrative (If Applicable) - <i>Describe the proposed actions for stabilizing/increasing the student's course success percentages.</i></b>				

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<b>Overall, in this section:</b>	The narrative is not included	The narrative includes all 5 of the criteria - Meets the Standard		The narrative includes all 5 of the criteria - Meets the Standard
<b>Reader Feedback</b>	Action Narrative not needed. The text there is really part of the explanation narrative.	N/A		N/A
<b>b. Student Course Success by Student Groups</b>				
<b>3. Is there a course success gap between African-American, Latinx, Filipinx student groups and Asian, Native American, Pacific Islander, White, Decline to State student groups?</b>	The gap between the two groups has decreased over the time span - Meets the Standard	The gap between the two groups has decreased over the time span - Meets the Standard		The gap between the two groups has decreased over the time span - Meets the Standard
<b>Course Success by Student Groups Narrative Explanation - <i>Explain why the course success gap is flat, increased or decreased.</i></b>				
<b>Overall, in this section:</b>	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes all 3 of the criteria - Meets the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>Course Success by Student Groups Action Narrative (If Applicable) - <i>What actions are program faculty and staff engaged in to decrease the course success gap between African-American, Latinx, and Filipinx student groups and Asian, Native American, Pacific Islander, White, and Decline to State student groups?</i></b>				
<b>Overall, in this section:</b>	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard	The narrative is not included		The narrative includes all 5 of the criteria - Meets the Standard

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Reader Feedback	Writer has indicated while there is still work to be done in this area the trend is improving, narrative explanation provides the needed actions to keep the trend in the correct direction.	N/A		N/A

### G. Student Course Success by Demographics

#### a. Student Course Success by Gender

What does the data indicate about course success?

Female	Course success has improved over the time span – Excellent	Course success has improved over the time span – Excellent		
Male	Course success has improved over the time span – Excellent	Course success has improved over the time span – Excellent		Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard
Non-binary	Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard			

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<b>Course Success by Gender Narrative Explanation - <i>If the data trend shows an increase, decrease, or no change/flat in the male, female, or non-binary student course success percentages, explain why the percentage is flat, increased or decreased.</i></b>				
<b>Overall, in this section:</b>	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>Course Success by Gender Action Narrative (If Applicable) - <i>Describe proposed actions to stabilize/increase the course success rates for either male, female, or non-binary.</i></b>				
<b>Overall, in this section:</b>	The narrative is not included	The narrative is not included		The narrative includes all 5 of the criteria - Meets the Standard
<b>Reader Feedback</b>	Noting the inverse relationship between male enrollment and male success rates is really interesting-and as the writer noted it's hard to know anything more without more information.	Reasons for increased success rates were discussed previously (teaching with equity practices), so even though they were not explicitly addressed here I am noting explanation as given.		N/A
<b>b. Student Course Success by Ethnicity</b>				
<b>What does the data trend indicate about program student course success by ethnicity?</b>				
<b>African Americans</b>	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent		Course success has improved over the time span - Excellent

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<b>Asian</b>	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent		Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard
<b>Filipinx</b>	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent		Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard
<b>Latinx</b>	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent		Course success has improved over the time span – Excellent
<b>Native American</b>	Course success has improved over the time span - Excellent	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard		Course success has improved over the time span – Excellent
<b>Pacific Islander</b>	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard		Course success has improved over the time span – Excellent
<b>White</b>	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent		

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				Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard
<b>Decline to State</b>	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard		
<b>Student Course Success by Ethnicity Narrative Explanation (If Applicable) - <i>If the data trend shows a decrease in any of the student ethnic groups' course success rates, explain why the percentage decreased for each (address each ethnic group by bullet point).</i></b>				
<b>Overall, in this section:</b>	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>Student Course Success by Ethnicity Narrative Explanation (If Applicable) - <i>Describe the reasons for the gap in course success.</i></b>				
<b>Overall, in this section:</b>	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard		The narrative includes all 3 of the criteria - Meets the Standard
<b>Student Course Success by Ethnicity Action Narrative (If Applicable) - <i>Describe the proposed actions for stabilizing/improving the course success by ethnicity.</i></b>				

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<b>Overall, in this section:</b>	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes all 5 of the criteria - Meets the Standard		The narrative includes all 5 of the criteria - Meets the Standard
<b>Reader Feedback</b>	<p>The Pacific Islander success rates jump around a lot from year to year so it's hard to gather much that is useful, but I believe technically the success rate has decreased (AY 16/17 vs 20/21) but there were more students in the 20/21 year. Something similar is going on with the Declined to State group, but there are less students in that group as compared to 16/17.</p>	<ul style="list-style-type: none"> <li>- While reasons for improvements in success rate are not explicitly stated in their relevant boxes, equity-centering pedagogy is implied as a cause in the action narrative calling for continuing its use, as well as faculty actively encouraging students to use other campus resources like the TLC.</li> <li>- Potential reasons for the success rate gap were not presented.</li> <li>- part b: the success rate for the three smallest demographics, Native American (76% to 72%), Pacific Islander (83% to 79%), and Decline to State (86% to 82%) are a bit muddied, with large swings from year to year. Over the 5 year span of these data,</li> </ul>		<p>The Biology program is outstanding and is an exemplar among STEM programs and all programs at the college in general. The students in the program have a high success rate. There is little to no gap among various demographics of students. The program, as mentioned in this self study, centers equity in all aspects of the program. This also almost the only program at the college that is increasing both in enrollment and productivity. The program could definitely use additional resources in terms of new FT faculty lines.</p>

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		<p>they have all had slight decreases in success rate. However, I suspect they instead merit a "no change or flat trend", because the numbers maybe too small to get a discernible trend (I haven't calculated the formal uncertainty on your rates, but I suspect that it is larger than the difference from 2016-17 to 2020-21. Especially e.g. 17 Native American students in 2016-17... that will be something like 25%uncertainty in the success rate!)</p> <ul style="list-style-type: none"><li>- It's not clear how students shifting from "Decline to State" to other demographics would cause the success rate for this group to change.</li></ul>		

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