## Computer Science Program Review

| Rubric Evaluation | Jennifer Sinclair (Same Division Faculty) | Allison Meezan (Faculty At-Large) | Sophia Kim (Staff At-Large) | Ram Subramaniam (Administrator) |
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| **A. Program Information** | | | | |
| **Program Mission Statement** | | | | |
| **How many criteria are met for the Program Mission statement?** | Addresses all 8 criteria - Meets the Standard | Addresses all 8 criteria - Meets the Standard | Addresses all 8 criteria - Meets the Standard | Addresses all 8 criteria - Meets the Standard |
| **Reader Feedback** | Placement of "through lecture, lab, and mentoring," reduces clarity for me. I think this was the only thing keeping me from marking this as Exceeds expectations. | The program mission statement is clear, concise and visionary. Excellent work! | I appreciate the aspect of preparing students to be "ethical" in whatever role they take. I also appreciate the phrase "catalyst and resource for shaping the future" - it's aspirational and reflects the values of preparing students to be leaders for the future. I think overall this is an effective and clear mission statement. | N/A |
| **Program Learning Outcomes** | | | | |
| **Overall, this section:** | Addresses all 5 criteria - Meets the Standard | Exceeds expectations for all 5 criteria – Excellent | Addresses all 5 criteria - Meets the Standard | Addresses all 5 criteria - Meets the Standard |
| **Reader Feedback** | I think that programing is its own language. And other aspects of Computer Science are also very technical. So if students do what you ask, they will be effectively communicating | The Program Level Outcomes are well written and aligned with the program mission statement. Specifically, the goal of 'reflect[ing] on their own work and be[ing] | I appreciate the focus on "critical thinking skills" -- the bulleted points all seem to speak to that. I also appreciate the sentence about students understanding the "social | N/A |

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| | in this technical language. I also notice that your ILOs include, "based on user's context," and "meets user's requirements." Both of these require effective communication skills. The ILO around computation is aligned with used of technology. You align with the other two ILOs explicitly in your Program Outcomes language. | able to evaluate the work of their peers' reflects the program's overall mission 'to be a catalyst and resource for shaping the future of the broad discipline of computer science'. The PLOs are written in actionable, student-friendly language and reflect higher order Bloom's cognitive skills. Outstanding! | and political context... ethical application" - especially in today's world of technology, the question of values and ethics seems especially important to impart on students. I was wondering about another possible SLO related to group work since my understanding is that in the working world this is a skill that is often an area of growth, and my understanding is that CS projects can be group projects? I also wonder if the CS concepts could be delineated more explicitly - even with a short list of some of the concepts that it seems (from my understanding) are just even the title of the courses (data structures and algorithms, object oriented programming, etc.). I also wondering if another possible SLO is something around building confidence to be a "competent programmer" or to see oneself in the | |

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| | | | field --> this gets at the aspect of diversity and inclusion. I'm not sure if this is a desired SLO for your classes, and it seems it has been a point of discussion that I've had with some of the instructors in the department. | |
| **B. FTES - Enrollment Trends** | | | | |
| **1. What does the FTES data trend indicate?** | FTES has not changed or has decreased over the time span no more than 1% to 10% - Meets the Standard | FTES has not changed or has decreased over the time span no more than 1% to 10% - Meets the Standard | FTES has not changed or has decreased over the time span no more than 1% to 10% - Meets the Standard | FTES has not changed or has decreased over the time span no more than 1% to 10% - Meets the Standard |
| **FTES Narrative Explanation -** ***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.*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 3 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes 3 of the criteria - Needs Some 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 |
| **FTES Action Narrative (if applicable) -** ***Describe the proposed actions for stabilizing/increasing the FTES.*** | | | | |
| **Overall, in this section:** | The narrative includes all 5 of the criteria - Meets the Standard | 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 | The narrative includes all 5 of the criteria - Meets the Standard |

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| **Reader Feedback** | It seems like in the ERA of chasing productivity over enrollment, responsibility for enrollment declines sits with the college, not the program...so I see why you didn't list factors within department control. But I did not see, "Explained in the context of the size of the program (i.e., number of students, number of sections)" | The program enrollment has not changed over the time period. The narrative accurately reflects that the program has reduced sections, while maintaining enrollment and thus increased productivity. This reflects and understanding of the trend, and by focusing on scheduling, the reasons are within department control. The narrative could be improved by framing the context and size of the program, number of sections reduced and productivity increases.<br>The Computer Science department has done a very good job of outlining specific actions that are within department control with a short term and long term timeline. If the selected actions are informed by data, the supporting data is not cited. The department has not provided benchmarks (deliverables) to measure | I was curious to better understand the data trend over time - it seems the number has remained relatively flat (even with the decreased number of sections), and I was wondering if you have an idea of why that is, especially taking COVID into account. From the actions you've proposed, it looks like you are especially working on increasing the entry and retention of students at the beginning level to ensure they can persist. I appreciate your naming SLI as a partner of support! And I definitely would like to look into this with you. I'm curious to understand one of your actions related to DE - were you thinking of DE across all high schools or mainly even CCAP schools? | Clear and straightforward plan. Dual enrollment, CS 49, augmented learning, SLI collaboration- are all great ideas. |

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| | | success of the actions. The narrative could be improved by providing more quantitative support(data) to explain the actions, and delineate the deliverables and metrics by which success will be measured. These improvements in the narrative will also help the department in crafting their midterm reports. | | |
| **C. Sections - Enrollment Trends** | | | | |
| **Section Narrative Explanation (If Applicable) - *Explain why the number of sections is flat, increased or decreased.*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 3 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes 3 of the criteria - Needs Some 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 |
| **Section Narrative Explanation (If Applicable) - *Explain why the number of sections increased while FTES decreased.*** | | | | |
| **Overall, in this section:** | The narrative is not included | | | The narrative includes all 3 of the criteria - Meets the Standard |
| **Reader Feedback** | I think it's fair in our program reviews to include some background info on actions like, "we | The department enrollment has remained steady despite a decline in the number of sections | The only explanation given in this section is that the number of sections was reduced because of | N/A |

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| | reduced the number of sections." Was it because of administrative policy that cut sections because financially we could "save more" by simultaneously cutting FTES and collecting "Hold Harmless" funding? Or did your program reduce sections strategically for some other reason? | offered. The narrative states that this was the result of college directive. The narrative could be improved by addressing the scheduling and modality of the reduced sections, and whether the reduced sections offered are meeting student needs. | requirements from the college. Was there reason given? It would have been helpful to see more of an understanding of this item from the department's viewpoint (or even to say that no reason was given for this reduction mandate). | |
| **D. Productivity - Enrollment Trends** | | | | |
| **1. What does the data indicate about the productivity trend?** | The program productivity trend has increased or has reached its maximum - Excellent | The program productivity is flat - Meets the Standard | The program productivity has not decrease by more than 5% - Needs Some Improvement to Meet the Standard | The program productivity trend has increased or has reached its maximum - Excellent |
| **Productivity Narrative Explanation (If Applicable) - *Explain why the productivity is flat, increased or decreased.*** | | | | |
| **Overall, in this section:** | 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 2 of the criteria - Needs Some Improvement to Meet the Standard | The narrative includes all 3 of the criteria - Meets the Standard |
| **Productivity Action Narrative (If Applicable) - *Describe the proposed actions for stabilizing/increasing the productivity number.*** | | | | |
| **Overall, in this section:** | The narrative is not included | The narrative includes fewer than 4 of the criteria - Needs Major | The narrative includes fewer than 4 of the criteria - Needs Major | The narrative includes all 5 of the criteria - Meets the Standard |

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| | | Improvement to Meet the Standard | Improvement to Meet the Standard | |
| **Reader Feedback** | Do you think your increase in productivity was positively influenced by scheduling or modality choices made by your department, or do you think it was just because the college was chasing WSCH? If you had strategic discussions and planning at the department level, I would like you to share that here and showcase it as an example for the rest of the campus. | The productivity narrative shows an understanding of the trend and the reason that the trend is in place. The reasoning for this trend is nominally within department control (scheduling). The narrative could be improved by delineating how scheduling is driven by course sequencing and student schedule demand. | It is unclear what was within the department's control - it seems that the number of sections was reduced but that was out of the department's control. Also, it seems the number of FTE's remained the same, but it is unclear why this happened even if the number of sections was reduced. Did the department do anything differently to maintain the number of FTEs? Does this data point reflect other data trends in the field of CS education? I would have also liked to see more explanation on potential actions the department is looking to take to increase productivity - would all this just be the same as the response in Section B? Is the department seeing a trend in reduction of sections and do they feel the need to respond to that? Do they think the | N/A |

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| | | | number of sections needs to be increased again? I was left with questions from this section and not a lot of answers. | |
| **E. Enrollment by Student Demographics** | | | | |
| **a. Enrollment by Gender** | | | | |
| **Enrollment by Gender Narrative Explanation - *Explain why the enrollment rates is flat, increased or decrease for male, female, or non-binary.*** | | | | |
| **Overall, in this section:** | 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 | The narrative includes all 3 of the criteria - Meets the Standard |
| **2. Does your program differ in the percentage of males to females, in this most recent year, compared to the College?**<br><br>**(College 2020-21 = 52%Female, 46% Male)** | The difference between the gender/sex is between 21% to 30% - Needs Some Improvement to Meet 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 | The difference between the gender/sex is between 21% to 30% - Needs Some Improvement to Meet the Standard |
| **Enrollment by Gender Action Narrative (If Applicable) - *What is the source of gender disparity and what proposed/planned actions is the program taking to achieve parity?*** | | | | |
| **Overall, in this section:** | 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 | The narrative includes all 5 of the criteria - Meets the Standard |

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| **3. What does the data trend indicate about enrollment (headcount) by gender of declared majors in the program?** | The Gender gap by declared major is between 21% and 30% - Needs Some 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 |
| **Reader Feedback** | There's a link to enrollment data by gender of DECLARED MAJORS that should inform Question 3. I think your answers are based on total enrollment rather than that of declared majors. Or maybe you're looking at differences in RATES rather than HEADCOUNTS. I believe you need to redo #3. | The program report accurately notes that there is a major gap (36-40%) of enrollment by gender. The program has identified concrete actions to address this gap. In addition, the program may want to consider collaborating with programs that have a more balanced gender ratio, and offer complimentary or paired classes that would be a gateway for more females to explore the computer science field. By Gender for Declared Majors. It looks like you have a small error. Enrollment went up (44% to 50) for females if examining the full 5 year span. | I appreciate the analysis about why the gender gap exists as well as the proposed actions. I'm curious to know how the 30-ish percent enrollment rate for women in CS classes compares to participation in CS jobs of women - my guess is that this rate is actually higher than the industry/ workplace rate. So in that sense, this could present a really amazing opportunity to increase the participation of women in the CS workplace --> is there more we could do with that opportunity? Would a peer/ industry mentoring program help that is focused on matching female students with females in the working world (this is something I am hoping to | Despite the large difference between the numbers of male and female students; the department has expressed a good understanding of this situation and also has plans that might lead to changes. |

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| | | | do through SLI - perhaps in partnership with the CS department). What happens between school and the workplace and is there more we can do in school to support the females that are already on this path to stick it out? I also wonder if there is a space for more discussion about the gender gap in CS classes - knowing that time must be limited when you have assignments and the learning of the material - to engage people of all genders to talk about this issue and what can be done not only by women/ non binary folks to persist but also what needs to happen with men in the field to create a more welcoming environment, knowing that they are in the majority. What kind of awareness can we build for men about this issue and their role in changing culture? I also wonder if there might be an action step to try to hire more | |

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| | | | female CS instructors? I don't know if that is already an explicit goal but this might require more intentional outreach in the hiring process to bring in more part-time faculty who are women/ nonbinary. Just some thoughts! And I would love to have more conversations about the action steps with the CS team. | |
| **b. Enrollment by Ethnicity** | | | | |
| **Does your program differ in enrollment distribution among ethnic groups, in this most recent year, compared to the College enrollment by ethnic group?**<br><br>**(College 2020-21 = 5% African American, 28% Asian, 5% Filipinx, 28% Latinx, 1% Native American, 1% Pacific Islander, 29% White, 4%Decline to State)** | The enrollment does not mirror the college's ethnic distribution - Needs Some Improvement to Meet the Standard | The enrollment does not mirror the college's ethnic distribution - Needs Some Improvement to Meet the Standard | The enrollment does not mirror the college's ethnic distribution - Needs Some Improvement to Meet the Standard | The enrollment does not mirror the college's ethnic distribution - Needs Some Improvement to Meet the Standard |

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| **Enrollment by Ethnicity Narrative Explanation (If Applicable) - *Explain changes identified over the past five years for each ethnic group (address each ethnic group by bullet point).*** | | | | |
| **Overall, in this section:** | 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 fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes all 3 of the criteria - Meets the Standard |
| **Enrollment by Ethnicity Action Narrative (If Applicable) - *Describe the proposed actions for addressing disparities in enrollment by ethnic group within the program.*** | | | | |
| **Overall, in this section:** | The narrative includes all 5 of the criteria - Meets 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 | The narrative includes all 5 of the criteria - Meets the Standard |
| **Reader Feedback** | Descriptions of actions are good; narrative explaining how enrollment has changed (Question 2) feels off point. I think the suggested structure is to provide an explanation for each ethnicity which shows a change in enrollment. (Note: the ordering of the Program Review items in E is different than in this Rubric, which makes things harder for both the writers and readers I think.) | The narrative for enrollment by demographics does an excellent job of providing concrete actions for addressing the disparity among underrepresented student groups. While the report does not appear to accurately reflect the college data, it does show an overall understanding of enrollment trends. The college is 28% Latinx, which is 17% higher than the 11% Latinx enrollment in the Computer Science | It is interesting to note that the Asian student enrollment has increased while the white student enrollment has decreased - any idea why? Also, as I noted with the gender gap above, I'd be curious to see how the percentages of African American, Latinx, Pacific Islander, and Filipinx rates compare with industry rates - is there another opportunity here that we should really be paying attention to? For example, I'm guessing that | As with the issues related to gender, the department has a good awareness of issues related to ethnic distribution of the students. The plan to partner with learning communities and expand dual enrollment will definitely help. |

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| | | department. The report accurately notes that the department is significantly higher in Asian enrollment (52% CS Department vs.28% college). The report does not provide reasons for this trend. The actions delineated in the narrative are demonstrable and measurable. | the percentage of Latinx computer programmers out there is much lower than the percentage of Latinx students enrolled in CS classes - can we do more with those students to help them persist beyond the major into the workplace?<br>I think the action steps here are good steps, and I wonder what more needs to be done. I like the idea of tailoring classes for Umoja and Puente students - perhaps including within that grouping EOPS students?<br>Also, as I mentioned above, in addition to recruiting more women CS instructors, how about more Latinx instructors? I know we already have at least one African American instructor with Kofi - is there more to be done in this arena of instructor recruitment?<br>What more could we do together (CS department and SLI) to support | |

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| | | | students from underrepresented groups to persist in CS? Peer tutoring? Where are the major stumbling blocks and barriers? I know that CS students who participated in SLI's winter internship program who got a chance to put their CS skills into practice found that to be very useful. Short of creating internship opportunities for everyone (which of course would be ideal) are there more simulated work opportunities that we could set up for students, especially for those for whom a career in tech is so abstract, to see examples of how what they're learning (as tough as it is) is going to be used in the work environment? Again, looking forward to talking more together! | |

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| **F. Student Course Success** | | | | |
| **a. Student Course Success** | | | | |
| **1. What does the data trend indicate about overall course success?** | 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 | Course success has improved over the time span - Excellent |
| **Student Course Success Narrative Explanation - *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.*** | | | | |
| **Overall, in this section:** | The narrative includes all 3 of the criteria - Meets the Standard | The narrative exceeds expectations – the narrative could be used as an exemplar – Excellent | The narrative includes all 3 of the criteria - Meets the Standard | The narrative includes all 3 of the criteria - Meets the Standard |
| **Student Course Success Action Narrative (If Applicable) - *Describe the proposed actions for stabilizing/increasing the student's course success percentages.*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard | The narrative exceeds expectations - the narrative could be used as an exemplar - Excellent | 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 |
| **Reader Feedback** | I feel like the action, "develop a comprehensive plan," is too vague to be evaluated. It feels like rather than having the discussion and making the plan, the department is deferring that week. Sometimes, there is too | The Computer Science department narrative shows an understanding of the trend and gives examples of specific department-wide actions that have lead to the increase in success. The department has done an | It was helpful to hear about the actions that have been implemented that have most likely contributed to increased student course success -I would be curious to understand how those actions might be impacting | N/A |

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| | much going on to do all that we want to do, so I don't feel this is unreasonable. But this is why I am assessing the narrative as I have. | excellent job of considering instructor experience in scheduling, utilizing embedded tutors and the STEM tutorial center to provide an integrated support network, and improving pedagogy by encouraging faculty to participate in Peer Online Course Review (POCR). The department could further improve the success of underrepresented students by collaborating among faculty to integrate more culturally relevant pedagogy into their curriculum. | students from different race/ethnic groups differently - for example, are Asian students taking more advantage of the STEM Center and embedded tutors or have students been taking advantage of those resources across all demographic groups? I know that's probably very difficult to understand, but it would be helpful to understand what causes students to have increased course success and keep doing more of that but also understand where the gaps might still exist (for example, if Black and Latinx students are accessing tutors or the STEM Center, what else should/ could we do with and for them?).<br>I was curious to learn more about the "comprehensive plan" to address student success. I could only assume that the plan includes many of the action steps mentioned in |

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| | | | previous sections. It's one thing to get students into the classes and to stay there but another to support them in passing the classes. What research in the field do we see that contributes to student success in CS? One thought that comes to mind is to create a study/ learning group among CS faculty where articles are read and discussed to better understand the strategies in the field that have been published - this could be something that SLI helps with. For example, in a very quick search, I came across this article as something we could read together and discuss, and I know for sure that there are many articles that share best practices and strategies for increase persistence and success for URM students in CS. There may be some interested faculty (part-time and full time?) in the department that would be interested in | |

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| | | | coordinating this, perhaps, with some added compensation for their time? | |
| **b. Student Course Success by Student Groups** | | | | |
| **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?** | The gap between the two groups has decreased over the time span - Meets the Standard | | The gap between the two groups has increased over the time span - Needs Major Improvement to Meet the Standard | The gap between the two groups has not changed over the time span - Needs Some Improvement to Meet the Standard |
| **Course Success by Student Groups Narrative Explanation - *Explain why the course success gap is flat, increased or decreased.*** | | | | |
| **Overall, in this section:** | 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 fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes all 3 of the criteria - Meets the Standard |
| **Course Success by Student Groups Action Narrative (If Applicable) - *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?*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard | 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 |

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| **Reader Feedback** | Course Success Gap is defined (oddly) on Page 4 of the Cheat Sheet. I think the writer addressed a more meaningful metric (current year success gap, rather than "course success gap" as defined on Page 4.) I'm inclined to ask for clarification about that definition...is that definition a mistake? If not, who identified it as important and why? "Make a plan" feels too vague for me to evaluate. | The program accurately notes that there is a gap in success between the two groupings observed in the data. The program does not provide a reason for this gap, or actions within department control to address the gap. The Computer Science department is urged to consider implementing many of the actions offered for improving overall course success, including partnering with the Umoja and Puente programs and working on recruiting underrepresented individuals to serve as embedded tutors (and role models) in classes. In addition, the department could increase its collaboration amongst faculty to integrate culturally relevant pedagogy throughout their course offerings. | There is clearly a gap in course success - this seems to match the gap in enrollment data. I would assume that the actions to address this gap would be similar to the actions described in previous sections. As I mentioned above, it would be interesting/ important (perhaps?) to gather more data and feedback from students from the different race and ethnic groups about what enables them to succeed – tutoring (peer or faculty tutors), different types of assignments, more real world application of skills, seeing role models/ people like them, etc. There is research that proposes different strategies that work for different groups - could we solicit feedback from students and focus efforts? For example, I'd be curious (as mentioned above) to see if Latinx CS students access the STEM center. If not, why not? Is | N/A |

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| | | | there more we can do to encourage them to access that resource? Do they not know about it? Do they feel afraid to try? What are the accessibility and mental blocks? I wonder how hard it would be to survey students to better understand success/ lack of success. I'd be curious to survey students who withdraw - there are large percentages of students of color that seem to have the W - can we better understand the factors contributing to that and try to lower that number? I'm wondering what how CS's withdrawal percentage compares to other STEM disciplines - it seems high and I'm guessing that has just been the trend, but should we be aiming to close that gap as well? At least those were students who had their foot in the door and then left early. What more can we do to retain them? (i'm sure you've had these | |

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| | | | conversations, and I wonder how we can get at understanding those students' mindset and decision making process). | |
| **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 | 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 improved over the time span - Excellent | Course success has improved over the time span - Excellent |
| **Non-binary** | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard | |
| **Course Success by Gender Narrative Explanation** - ***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.*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 2 of the criteria - Needs Major | The narrative includes all 3 of the criteria - Meets the Standard | The narrative includes fewer than 2 of the criteria - Needs Major | The narrative includes all 3 of the criteria - Meets the Standard |

## Computer Science Program Review

| Rubric Evaluation | Jennifer Sinclair (Same Division Faculty) | Allison Meezan (Faculty At-Large) | Sophia Kim (Staff At-Large) | Ram Subramaniam (Administrator) |
|---|---|---|---|---|
| | Improvement to Meet the Standard | | Improvement to Meet the Standard | |
| **Course Success by Gender Action Narrative (If Applicable) -** ***Describe proposed actions to stabilize/increase the course success rates for either male, female, or non-binary.*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard | 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 |
| **Reader Feedback** | Are you working with IR? or SLI? How will attracting and retaining more female students stabilize/increase course success rates for women? What about men...their success rates were even lower? It sounds like you're growing female enrollment for statistical reasons rather than improvement methods. I don't think statistical significance is considered in the metrics that we're asked to consider here, perhaps because our data is population data. | The department has accurately noted that there is a small gap in success rates by gender, but that the number of women enrolled is small. The department states a goal of increasing enrollment of females by 10%. However, while this is nominally within department control and demonstrable, the department is urged to offer concrete actions that would help achieve this goal. | These data definitely could use more investigation and analysis, and I appreciate your naming SLI as a partner in this! I am interested in figuring out a plan for analyzing and then acting upon the data, in collaboration with what literature we can find in the field of CS education (regarding strategies, especially). It's great to see that the female course success rate is comparable to the male success rate – even though the female numbers are so much lower. Again, how do we jump on this as an opportunity --> it seems if we can just get more | N/A |

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|---|---|---|---|---|
| | | | women to enter and persist in CS, they have a good chance of succeeding (potentially?). Or is it just a self selected group of women that are entering CS who are already on a track of success (for example, are most of the women Asian and white where they've had exposure and access to CS education since middle or high school (or even before), and maybe are upper income students? I'd be curious to learn more about the gender analysis of the data. | |
| **b. Student Course Success by Ethnicity** | | | | |
| **What does the data trend indicate about program student course success by ethnicity?** | | | | |
| **African Americans** | 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 | 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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|---|---|---|---|---|
| **Asian** | 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 | Course success has improved over the time span - Excellent |
| **Filipinx** | 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 | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard |
| **Latinx** | 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 | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard |
| **Native American** | 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 | Course success has improved over the time span - Excellent |
| **Pacific Islander** | 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 | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard |
| **White** | 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 | Course success has improved over the time span - Excellent |

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|---|---|---|---|---|
| **Decline to State** | 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 | Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard | |
| **Student Course Success by Ethnicity Narrative Explanation (If Applicable) - *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).*** | | | | |
| **Overall, in this section:** | 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 fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard | The narrative includes all 3 of the criteria - Meets the Standard |
| **Student Course Success by Ethnicity Narrative Explanation (If Applicable) - *Describe the reasons for the gap in course success.*** | | | | |
| **Overall, in this section:** | 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 |
| **Student Course Success by Ethnicity Action Narrative (If Applicable) - *Describe the proposed actions for stabilizing/improving the course success by ethnicity.*** | | | | |
| **Overall, in this section:** | The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard | 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 |

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|---|---|---|---|---|
| **Reader Feedback** | "Develop strategies to increase success" feels too vague for me to assess. | The department has accurately noted the trends in success by ethnicity. However, the department is urged to consider strategies for increasing enrollment and success of underrepresented groups more closely. For example, the department could work with the STEM tutorial center to recruit embedded tutors from underrepresented populations, and collaborate with counselors to encourage students to take foundational courses through the Guided Pathways program. | As with a few of the above answers, it seems the department did not want to repeat redundancies? (explanations, action steps) - therefore, I did not rate the items above. Instead, I just lean on my answers above, and I will repeat that I am excited and looking forward to working with the CS department more through my role with SLI to get a better understanding of these data and, more importantly, propose strategies to test that will hopefully contribute to closing the gender gaps, race/ ethnicity gap, enrollment/ withdrawal gap, and so on! It was encouraging to see that the department is very interested in addressing these issues head on, even in the midst of busy quarters and doing the work! | The department is working with SLI to understand course success data in a more granular level. The department is also engaged in other conversations related to enrollment, persistence, and retention. The results from any related actions will become evident in the next cycle of self study. |