Mathematics Department Meeting<br>Agenda - Tuesday, September 8, 2020<br>3:00pm - 4:00pm

## 1. MESA/S-STEM

2. Campus Climate Survey
3. Math Success Rates
4. Math Department Mission (Samples)
a. SBVC Mission
i. San Bernardino Valley College maintains a culture of continuous improvement and a commitment to provide high-quality education, innovative instruction, and services to a diverse community of learners.
b. To provide an equity-mindedness environment where students can learn, gain sufficient understanding and experiences of mathematics to pursue their career, develop mathematical thinking, encourage life-long learning, and acquire functional math skills to enhance productive citizenry.
c. In fulfilling this mission, the department creates an environment where the faculty can continue to grow as professionals and scholars, while providing public and discipline related service.
5. Program Outcome Mapping
6. Student Learning Outcomes
7. ISER
8. Other

## $\overline{\text { San Berinardino }}$ <br> Researcha, Planning \& Insthunional Eifectiveness

Request Placed: 6/17/2020 by Dr. S. Lewis
Request Received: 6/18/2020 by CGM
Request Completed: 7/29/2020 by CGM
Completion Time Requested: ASAP
Request: Math success rates disaggregated by ethnicity, gender, and course for F2017, F2018 and F2019.
Results: Tables 1 shows the percentages of students who received A's, B's, C's and P grades (Success Rates). Table 2 shows the percentage of students who remained enrolled in the course with and received any grade on record (Retention Rates). The most recent fall term, in green font data, identifies improvements over 5\% from the previous term, and red data shows a performance decline greater than $10 \%$. Psych 105 - Statistics for the Behavioral Sciences was added to the tables due to its compatibility with Math 108 - Introduction to Statistics and Probability and successful, common fit with SLAM (Statistics and Liberal Arts Math). ${ }^{1}$

Table 1. Total Success

| Math Course Success Rates |  |  |  |
| :--- | ---: | ---: | ---: |
| Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Success | Success | Success |
| 942 | $68.9 \%$ | $59.5 \%$ | $\mathrm{n} / \mathrm{a}$ |
| 952 | $73.5 \%$ | $83.4 \%$ | $\mathrm{n} / \mathrm{a}$ |
| 962 | $78.2 \%$ | $65.3 \%$ | $33.8 \%$ |
| 090 | $52.6 \%$ | $56.4 \%$ | $\mathrm{n} / \mathrm{a}$ |
| 095 | $61.1 \%$ | $63.3 \%$ | $39.1 \%$ |
| 096 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $34.8 \%$ |
| 102 | $52.2 \%$ | $62.9 \%$ | $37.4 \%$ |
| 103 | $49.5 \%$ | $49.6 \%$ | $48.4 \%$ |
| 108 | $63.0 \%$ | $56.8 \%$ | $55.3 \%$ |
| 115 | $54.2 \%$ | $70.0 \%$ | $64.2 \%$ |
| 141 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $81.8 \%$ |
| 151 | $63.4 \%$ | $50.6 \%$ | $56.9 \%$ |
| 250 | $58.8 \%$ | $54.1 \%$ | $55.0 \%$ |
| 251 | $52.8 \%$ | $59.7 \%$ | $48.7 \%$ |
| 252 | $90.0 \%$ | $78.6 \%$ | $88.9 \%$ |
| 265 | $\mathrm{n} / \mathrm{a}$ | $28.6 \%$ | $77.3 \%$ |
| 266 | $88.9 \%$ | $50.0 \%$ | $90.2 \%$ |
| Psych-105 | $61.3 \%$ | $68.8 \%$ | $67.6 \%$ |

Table 2. Total Retention

| Math Course Retention Rates |  |  |  |
| :--- | ---: | ---: | ---: |
| Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Retention | Retention | Retention |
| 942 | $92.1 \%$ | $92.3 \%$ | $\mathrm{n} / \mathrm{a}$ |
| 952 | $94.8 \%$ | $93.8 \%$ | $\mathrm{n} / \mathrm{a}$ |
| 962 | $94.6 \%$ | $92.6 \%$ | $75.2 \%$ |
| 090 | $87.4 \%$ | $88.6 \%$ | $\mathrm{n} / \mathrm{a}$ |
| 095 | $88.9 \%$ | $91.3 \%$ | $81.2 \%$ |
| 096 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $79.7 \%$ |
| 102 | $84.9 \%$ | $86.4 \%$ | $80.8 \%$ |
| 103 | $82.5 \%$ | $82.9 \%$ | $82.1 \%$ |
| 108 | $81.9 \%$ | $81.4 \%$ | $87.0 \%$ |
| 115 | $83.3 \%$ | $83.3 \%$ | $92.7 \%$ |
| 141 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $81.8 \%$ |
| 151 | $91.5 \%$ | $80.9 \%$ | $88.1 \%$ |
| 250 | $91.2 \%$ | $87.8 \%$ | $91.6 \%$ |
| 251 | $83.3 \%$ | $85.5 \%$ | $75.0 \%$ |
| 252 | $90.0 \%$ | $85.7 \%$ | $94.4 \%$ |
| 265 | $\mathrm{n} / \mathrm{a}$ | $92.9 \%$ | $93.2 \%$ |
| 266 | $88.9 \%$ | $75.0 \%$ | $97.6 \%$ |
| Psych-105 | $96.8 \%$ | $100.0 \%$ | $91.0 \%$ |

[^0]Table 3 shows student performance measures disaggregated by STEM vs SLAM declared majors. ${ }^{2}$ STEM majors outperformed SLAM majors by $11.4 \%$ points in 102 - College Algebra and $24.6 \%$ points in 151 - Precalculus and had retention rates $21.1 \%$ percentage rates higher. SLAM majors outperformed STEM majors in Psy-105 by 9.7\% points and retention rates were also higher for SLAM majors by $24.1 \%$ points. However, SLAM majors had higher success and retention rates ( $8.2 \%$ points) compared with STEM majors in 103 - Plane Trigonometry, a finding not supporting the typical community college STEM/SLAM course curriculum. Math 108 had slightly higher success rates for STEM majors, but Psy 105 showed higher success and retention rates for SLAM majors. Math 151 - Precalculus had the highest success rates for STEM majors among all 100 series courses.

Table 3. Performance Measures by STEM vs SLAM Majors

| Fall 2019 | Success Rates |  | Retention Rates |  |
| :---: | :---: | :---: | :---: | :---: |
| Course | STEM-Majors | SLAM-Majors | STEM-Majors | SLAM-Majors |
| 095 | 53.6\% | 52.1\% | 87.8\% | 86.9\% |
| 102 | 61.6\% | 50.2\% | 84.8\% | 84.2\% |
| 103 | 58.5\% | 66.7\% | 86.2\% | 94.4\% |
| 108 | 73.2\% | 69.1\% | 90.2\% | 91.1\% |
| 115 | n/a | 68.2\% | n/a | 86.4\% |
| Psy-105 | 61.1\% | 70.8\% | 66.7\% | 90.8\% |
| 151 | 74.6\% | 50.0\% | 95.2\% | 73.1\% |

STEM = Bio, Astronomy, Chemistry, CS, Comp Eng., ElecTech., EnvSci, Nursing, Math, Geology, Geography, Pharm., Physics SLAM = All other AA, AS, AA-T, AS-T

Figures 1 and 2 break these courses down by course and emphasis: STEM (Science, Technology, Engineering, and Mathematics) vs SLAM (Statistics and Liberal Arts Math). Within the STEM track, the recommended entry-level transfer course, 102 - College Algebra shows an average $50.8 \%$ success rate over the past three fall terms. Within the 200 series courses, the highest success rate was in 252 - Multivariable Calculus (85.8\%), which also had the highest retention rate (93\%).
Within the SLAM track, the newly offered course, 141 - Business Calculus (fall 2019 only) had the highest success rate (81.8\%) and Psy-105 - Statistics for the Behavioral Sciences followed with $65.9 \%$ success, $7.5 \%$ points higher than 108 - Introduction to Probability and Statistics. Psy 105 also had the highest retention rate in this track ( $95.9 \%$ ).


Figure 1. Fall 2017, 2018, 2019 Aggregated Course Success Averages Color Key: Light Blue = STEM-Track, Dark Blue = SLAM Track, Yellow = SLAM Track-Fall 2019 Only


Figure 2. Fall 2017, 2018, 2019 Aggregated Course Retention Averages
Color Key: Light Blue = STEM-Track, Dark Blue = SLAM Track, Yellow = SLAM Track-Fall 2019 Only
Table 4 disaggregates developmental math courses by race. Math 942 and 952 are no longer offered since the rollout of AB705. Historically, students performed better in 952 in comparison to 942 , but the only current developmental course is 962 - Arithmetic and Prealgebra. Overall, there has been a large performance decline in this course between fall 2018 and 2019, with the Hispanic students showed the greatest decline. Black students showed the lowest variation in performance.

Table 4. Developmental Course Success and Retention by Race

| Math Course Success Rates by Race |  |  |  | Math Course Retention Rates by Race |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall Terms | 2017 | 2018 | 2019 | Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Success | Success | Success | Math Course | Retention | Retention | Retention |
| 942 |  |  |  | 942 |  |  |  |
| Asian | 66.7\% | 87.5\% | n/a | Asian | 77.8\% | 100.0\% | n/a |
| Black | 57.8\% | 53.7\% | n/a | Black | 80.0\% | 90.7\% | n/a |
| Hispanic | 70.7\% | 61.0\% | n/a | Hispanic | 94.2\% | 92.9\% | n/a |
| Nat.Amer/PI | n/a | n/a | $\mathrm{n} / \mathrm{a}$ | Nat.Amer/PI |  | n/a | n/a |
| White | 72.7\% | 65.2\% | n/a | White | 100.0\% | 95.7\% | n/a |
| 952 |  |  |  | 952 |  |  |  |
| Asian | 88.9\% | 85.7\% | n/a | Asian | 88.9\% | 100.0\% | n/a |
| Black | 60.0\% | 68.8\% | n/a | Black | 94.3\% | 81.3\% | n/a |
| Hispanic | 71.6\% | 83.5\% | n/a | Hispanic | 94.3\% | 94.9\% | n/a |
| Nat.Amer/PI | n/a | n/a | n/a | Nat.Amer/PI | n/a | n/a | n/a |
| White | 95.2\% | 100.0\% | n/a | White | 100.0\% | 100.0\% | n/a |
| 962 |  |  |  | 962 |  |  |  |
| Asian | n/a | 87.5\% | n/a | Asian | n/a | 100.0\% | n/a |
| Black | 61.1\% | 50.0\% | 40.9\% | Black | 94.4\% | 85.7\% | 81.8\% |
| Hispanic | 80.2\% | 66.4\% | 28.1\% | Hispanic | 94.1\% | 94.5\% | 72.9\% |
| Nat.Amer/PI | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | n/a | Nat.Amer/PI | n/a | n/a | n/a |
| White |  | 88.9\% | 61.5\% | White | 95.8\% | 94.4\% | 76.9\% |

$\mathrm{n} / \mathrm{a}=5$ or less students

Figure 3 shows a decline in performance measures for Math 962 between fall 2018 and 2019, particularly for Hispanic students.


Figure 3. Fall 2017, 2018, 2019 Success rates for Math 962

Just above the developmental-level courses are the associate degree applicable, below transfer-level 095 Intermediate Algebra and 096 - Elementary and Intermediate Algebra. Table 5 shows lower success rates for Blacks (50.3\%), Hispanics (53.7\%) and Native Americans and Pacific Islanders (46.1\%) than Asians (67\%) and Whites (66\%) in 095 over a three-year average. The retention rates follow a similar trend.
Math 096 is a newer course that condenses elementary and intermediate algebra. The success rates for fall 2019 show lower success rates for Blacks (26.7\%), Hispanics (36.0\%), and Whites (37\%) in comparison to Asians (48\%) and Native American and Pacific Islanders (46\%). The California state average success rate from fall 2019 for degree applicable math courses with the 095/096 TOP Code, 170100, is $53 \%$. Comparing 095 and 096 , all races except Native American and Pacific Islanders performed slightly better in Math 095.

Table 5. Performance Measures by Race in Intermediate Algebra - 095 and Elementary and Intermediate Algebra

| Math Course Success Rates by Race |  |  |  |  | Math Course Retention Rates by Race |  |  |  | $\begin{gathered} 3- \\ \text { Yr.Avg } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall Terms | 2017 | 2018 | 2019 | $\begin{gathered} 3- \\ \text { Yr.Avg } \end{gathered}$ | Fall Terms | 2017 | 2018 | 2019 |  |
| Math Course | Success | Success | Success | 66.9\% | Math Course | Retention | Retention | Retention | 93.4\% |
| 095 |  |  |  |  | 095 |  |  |  |  |
| Asian | 73.5\% | 79.5\% | 47.6\% |  | Asian | 97.0\% | 100.0\% | 83.3\% |  |
| Black | 56.1\% | 57.8\% | 37.0\% | 50.3\% | Black | 77.2\% | 90.0\% | 82.1\% | 83.1\% |
| Hispanic | 60.4\% | 62.5\% | 38.1\% | 53.7\% | Hispanic | 89.3\% | 91.3\% | 81.1\% | 87.2\% |
| Nat.Amer/PI | n/a | 63.6\% | 28.6\% | 46.1\% | Nat.Amer/PI | n/a | 90.9\% | 78.6\% | 84.8\% |
| White | 71.7\% | 69.7\% | 55.6\% | 65.7\% | White | 91.3\% | 90.8\% | 81.8\% | 88.0\% |
| 096 |  |  |  | $\mathrm{n} / \mathrm{a}$ | 096 |  |  |  |  |
| Asian | n/a | n/a | 47.6\% |  | Asian | n/a | n/a | 85.7\% | n/a |
| Black | n/a | n/a | 26.7\% | n/a | Black | n/a | n/a | 78.3\% | n/a |
| Hispanic | n/a | n/a | 36.0\% | n/a | Hispanic | n/a | n/a | 80.1\% | n/a |
| Nat.Amer/PI | n/a | n/a | 45.5\% | n/a | Nat.Amer/PI | n/a | n/a | 81.8\% | n/a |
| White | n/a | n/a | 36.6\% | n/a | White | n/a | n/a | 78.9\% | n/a |

[^1]Table 6 disaggregates STEM-track, entry level/transfer-level math courses by race. Success and retention rates have dropped from fall 2018 to 2019 for Math 102 - College Algebra. Performance measures for Math 103 Trigonometry had mixed results; Asians and Whites did better in fall 2019 vs 2018, but Blacks and Hispanics show a performance decline. These courses are taken by both STEM and SLAM track students; the difference in performance in these courses between STEM vs SLAM majors was shown in Table 3.
Math 151 - Precalculus shows improved performance measures across all ethnicities between fall 2018 and 2019. Across all races, students performed best in Math 151- Precalculus in the most recent fall term.

Table 6. STEM-track 100 Series Transfer-level Course Success and Retention by Race

| Math Course Success Rates by Race |  |  |  | Math Course Retention Rates by Race |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall Terms | 2017 | 2018 | 2019 | Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Success | Success | Success | Math Course | Retention | Retention | Retention |
| 102 |  |  |  | 102 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | 58.8\% <br> 53.1\% <br> 51.0\% <br> n/a <br> 55.0\% | $\begin{array}{r} \hline 80 \% * \\ 59.1 \% \\ 60.8 \% \\ \text { n/a } \\ 80.8 \% \end{array}$ | 59.2\% <br> 29.8\% <br> 37.3\% <br> 33.3\%* <br> 44.2\% | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | 88.2\% <br> 90.6\% <br> 83.8\% <br> n/a <br> 80.0\% | 100\%* <br> 90.9\% <br> 84.8\% <br> n/a <br> 88.5\% | 81.6\% $79.8 \%$ $82.1 \%$ $55.6 \% *$ $78.8 \%$ |
| 103 |  |  |  | 103 |  |  |  |
| Asian | 77.8\%* | 62.5\%* | 66.7\% | Asian | 100\%* | 75.\%* | 86.4\% |
| Black | 60.0\% | 45.5\% | 30.8\% | Black | 90.0\% | 81.8\% | 84.6\% |
| Hispanic | 46.5\% | 50.6\% | 44.1\% | Hispanic | 83.1\% | 85.1\% | 79.5\% |
| Nat.Amer/PI | n/a | n/a | n/a | Nat.Amer/PI | n/a | n/a | n/a |
| White | 50\%* | 33\%* | 66.7\% | White | 90\%* | 33\%* | 87.5\% |
| 151 |  |  |  | 151 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White |  | 90.9\% 50\%* <br> 43.8\% n/a <br> 57.1\%* | 87.5\%* <br> 66.7\%* <br> 55.0\% <br> n/a <br> 66.7\% | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $100 \% *$ $87.5 \%^{*}$ $92.2 \%$ n/a n/a | $100.0 \%$ $50 \% *$ $82.8 \%$ $\mathrm{n} / \mathrm{a}$ $71.4 \%^{*}$ | $100 \% *$ $100 \% *$ $87.0 \%$ $\mathrm{n} / \mathrm{a}$ $91.7 \%$ |

[^2]Table 7 disaggregates SLAM-track, entry level/transfer-level math courses by race. In Math 108 - Introduction to Probability and Statistics, Asian and White students show higher success and retention rates than the other races. Math 141 - Business Calculus had lower enrollment, so even comparisons based on race was not possible. Math 115 and Psy 105 showed similar trends: White students had higher performance measures than Black and Hispanic students. When looking at all races, students performed slightly better in Psy 105 than the other courses.

Table 7. SLAM-track 100 Series Transfer-level Course Success and Retention by Race

| Math Course Success Rates by Race |  |  |  |
| :---: | :---: | :---: | :---: |
| Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Success | Success | Success |
| 108 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\begin{array}{r} 100.0 \% \\ 41.7 \% \\ 64.6 \% \\ \mathrm{n} / \mathrm{a} \\ 50.0 \% \end{array}$ | $\begin{array}{r} 100.0 \% \\ 37.5 \% \\ 55.3 \% \\ \text { n/a } \\ 70.0 \% \end{array}$ | 73.1\% 46.2\% 53.9\% 66.7\% 75.4\% |
| 115 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\begin{array}{r} \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ 52.6 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ \hline \end{array}$ | $\begin{array}{r} n / a \\ \mathrm{n} / \mathrm{a} \\ 72.0 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ \hline \end{array}$ | n/a <br> 60.0\% <br> 64.0\% <br> n/a <br> 75\%* |
| 141 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | n/a <br> n/a <br> n/a <br> n/a <br> n/a | n/a <br> n/a <br> n/a <br> n/a <br> n/a | $\begin{array}{r} n / a \\ n / a \\ 100 \% * \\ n / a \\ n / a \end{array}$ |
| Psy-105 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\mathrm{n} / \mathrm{a}$ <br> n/a <br> 54.5\% <br> n/a <br> n/a | $\begin{array}{r} \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ 63.2 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ \hline \end{array}$ | n/a <br> 59.1\% <br> 66.7\% <br> n/a <br> 83.3\% |


| Math Course Retention Rates by Race |  |  |  |
| :--- | ---: | ---: | ---: |
| Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Retention | Retention | Retention |
| $\mathbf{1 0 8}$ |  |  |  |
| Asian | $100.0 \%$ | $100.0 \%$ | $92.3 \%$ |
| Black | $58.3 \%$ | $75.0 \%$ | $75.8 \%$ |
| Hispanic | $85.4 \%$ | $80.5 \%$ | $87.6 \%$ |
| Nat.Amer/PI | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $77.8 \%$ |
| White | $66.7 \%$ | $90.0 \%$ | $93.8 \%$ |
| 115 |  |  |  |
| Asian | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Black | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $100.0 \%$ |
| Hispanic | $89.5 \%$ | $84.0 \%$ | $90.7 \%$ |
| Nat.Amer/PI | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| White | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $100 \%{ }^{*}$ |
| 141 |  |  |  |
| Asian | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | n |
| Black | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Hispanic | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $75 \% *$ |
| Nat.Amer/PI | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| White | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Psy-105 |  |  |  |
| Asian | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | n |
| Black | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $86.4 \%$ |
| Hispanic | $100.0 \%$ | $100.0 \%$ | $90.3 \%$ |
| Nat.Amer/PI | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| White | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $100.0 \%$ |

[^3]Table 8 disaggregates STEM-track, 200-series transfer-level math courses by race. From fall 2018 to 2019, students performed better or as well in Math 250 - Single Variable Calculus I. Black and Hispanic student success rates fell below Asian and White students, but their retention rates exceeded Asian and White students. Most student group counts for Math 251 - Single Variable Calculus II were too low for a meaningful comparison, but Hispanic students with a course enrollment count $>10$ showed a decline of approximately $10 \%$ points in performance measures between fall 2018 and 2019. Only Hispanic students had a Math 252 - Multivariable Calculus enrollment count >10, and their performance measures increased by over $10 \%$ points between fall 2018 and 2019. The comparison data between fall 2018 and 2019 for Math 265 - Linear Algebra and Math 266 - Ordinary Differential Equations could not be determined due to low enrollment counts in fall 2018.

Table 8. STEM-track 200 Series Transfer-level Course Success and Retention by Race

| Math Course Success Rates by Race |  |  |  | Math Course Retention Rates by Race |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fall Terms | 2017 | 2018 | 2019 | Fall Terms | 2017 | 2018 | 2019 |
| Math Course | Success | Success | Success | Math Course | Retention | Retention | Retention |
| 250 |  |  |  | 250 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\begin{array}{r} \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ 50.0 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \end{array}$ | 62.5\%* <br> 33.3\%* <br> 52.9\% <br> n/a <br> 66.7\% | 68.8\% 50.0\%* 52.6\% n/a <br> 71.4\% | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | n/a <br> n/a <br> 87.5\% <br> n/a <br> n/a |  | 87.5\% <br> 100\%* <br> 91.8\% <br> n/a <br> 85.7\% |
| 251 |  |  |  | 251 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\begin{array}{r} \hline \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ 50.0 \% \\ \mathrm{n} / \mathrm{a} \\ 50 \%^{*} \\ \hline \end{array}$ | $\begin{array}{r} \text { 90\%* } \\ \mathrm{n} / \\ 51.2 \% \\ \mathrm{n} / \mathrm{a} \\ 80 \% * \\ \hline \end{array}$ | $\begin{array}{r} \hline 70 \%^{*} \\ 14.3 \%^{*} \\ 42.0 \% \\ \text { n/a } \\ 87.5 \%^{*} \end{array}$ | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\begin{array}{r} \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ 84.0 \% \\ \mathrm{n} / \mathrm{a} \\ 100 \%^{*} \end{array}$ | 100\%* <br> n/a <br> 79.1\% <br> n/a <br> 100\%* | 90\%* <br> 71.4\%* <br> 68.0\% <br> n/a <br> 100\%* |
| 252 |  |  |  | 252 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | n/a <br> n/a <br> n/a <br> n/a <br> n/a | $n / a$ $n / a$ $72.7 \%$ $n / a$ $n / a$ | 87.5\%* <br> n/a <br> 87.0\% <br> n/a <br> n/a | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | n/a <br> n/a <br> n/a <br> n/a <br> n/a | $\begin{array}{r} n / a \\ n / a \\ 81.8 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \end{array}$ | $\begin{array}{r} 100 \% * \\ \mathrm{n} / \mathrm{a} \\ 91.3 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ \hline \end{array}$ |
| 265 |  |  |  | 265 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White |  | $\begin{array}{r} \text { n/a } \\ \text { n/a } \\ 30 \%^{*} \\ \text { n/a } \\ \text { n/a } \end{array}$ | 64.0\% n/a n/a | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White |  | $\begin{array}{r} \text { n/a } \\ \text { n/a } \\ 100 \%^{*} \\ \text { n/a } \\ \text { n/a } \end{array}$ | 100.0\% <br> n/a <br> 88.0\% <br> n/a <br> n/a |
| 266 |  |  |  | 266 |  |  |  |
| Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White | $\begin{array}{r} \text { n/a } \\ \text { n/a } \\ 100 \% * \\ \text { n/a } \\ \text { n/a } \end{array}$ | $\begin{array}{r} \text { n/a } \\ \text { n/a } \\ 50 \%^{*} \\ \text { n/a } \\ \text { n/a } \end{array}$ | 92.9\% <br> n/a <br> 87.0\% <br> n/a <br> n/a | Asian <br> Black <br> Hispanic <br> Nat.Amer/PI <br> White |  | $\begin{array}{r} n / a \\ n / a \\ 66.7 \%^{*} \\ \text { n/a } \\ \text { n/a } \end{array}$ | $\begin{array}{r} 100.0 \% \\ \mathrm{n} / \mathrm{a} \\ 95.7 \% \\ \mathrm{n} / \mathrm{a} \\ \mathrm{n} / \mathrm{a} \\ \hline \end{array}$ |

[^4]Table 9 shows all math course success and retention rates during fall 2019 by gender. The differences between females and males in the below transfer-level courses are unremarkable. Within the STEM-track 100 series transferlevel, a major increase in success rates in 102 - College Algebra can be seen for males ( $17.8 \%$ points). Males also had much higher success rates ( $45.4 \%$ points) than females in 265 - Linear Algebra. Within the SLAM-track, females outperformed males in both statistic courses: 108 ( $5.1 \%$ points), Psy 105 ( $18.7 \%$ points). Males had better success and retention rates in 115 - Ideas of Math ( $10.2 \%$ and $23.1 \%$ points, respectively).

Table 9. All Math Course Success and Retention Rates by Gender

| Course Success by Gender - Fall 2019 |  |  | Course Retention by Gender - Fall 2019 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Course | Female | Male | Course | Female | Male |
| 962 | 49.1\% | 50.0\% | 962 | 79.2\% | 90.9\% |
| 095 | 50.3\% | 55.6\% | 095 | 84.8\% | 90.6\% |
| 096 | 45.2\% | 42.5\% | 096 | 85.7\% | 86.3\% |
| 102 | 45.3\% | 63.1\% | 102 | 81.4\% | 87.9\% |
| 103 | 60.0\% | 55.6\% | 103 | 86.0\% | 88.9\% |
| 151 | 65.2\% | 68.9\% | 151 | 87.0\% | 91.1\% |
| 250 | 58.8\% | 55.4\% | 250 | 94.1\% | 90.8\% |
| 251 | 44.0\% | 46.9\% | 251 | 76.0\% | 71.9\% |
| 252 | 90.9\% | 88.9\% | 252 | 100.0\% | 94.4\% |
| 265 | 45.5\% | 90.9\% | 265 | 81.8\% | 95.5\% |
| 266 | 85.7\%* | 92.3\% | 266 | 100\%* | 96.2\% |
| 108 | 71.5\% | 66.4\% | 108 | 90.1\% | 93.6\% |
| 115 | 66.7\% | 76.9\% | 115 | 81.8\% | 100.0\% |
| 141 | n/a | n/a | 141 | n/a | n/a |
| Psy-105 | 75.0\% | 56.3\% | Psy-105 | 89.3\% | 87.5\% |

* $6-10$ students, $\mathrm{n} / \mathrm{a}=5$ or less students

Color Key: Light Blue = Below transfer-level, Light Green = 100 series transfer-level, Dark Green = 200 series STEM-track transfer-level, Orange = SLAM-track transfer-level

## Summary:

There is a notable difference in performance measures within the STEM vs SLAM tracks as well as the different racial and gender groups within the students enrolled in them. A math track in alignment with student goals/majors should help to increase performance measures. Other alternative mathematical models also adds a business track. ${ }^{3}$

References:

1. https://pasadena.edu/academics/divisions/math-computer-science/math/slam-sequence.php, http://www.cmc3s.org/conferences/Spring2014/presentations/LindaHintzmanSLAM.pptx
2. https://pasadena.edu/academics/divisions/math-computer-science/math/math-sequences.php
3. https://www.dvc.edu/enrollment/assessment/assessments/math-placement-options.html\#STEM

[^0]:    $\mathrm{n} / \mathrm{a}=5$ or less students

[^1]:    $\mathrm{n} / \mathrm{a}=5$ or less students

[^2]:    *6 -10 students, $\mathrm{n} / \mathrm{a}=5$ or less students

[^3]:    *6-10 students, $\mathrm{n} / \mathrm{a}=5$ or less students

[^4]:    *6-10 students, $\mathrm{n} / \mathrm{a}=5$ or less students

