Mt. SAC Math Placement System Proposal (with details)

August 25, 2017

The Mt. SAC Math Department supports the following proposition regarding the use of high school performance data as multiple measures for placing Mt. SAC students into Mt. SAC math courses.

Terms

- MMAP (Multiple Measures Assessment Project) – A California statewide project that has developed a researched-backed placement model using high school performance data. Over half of the community colleges in California have implemented or will be implementing the MMAP model (or a customized version of it).

1. All new students taking courses Summer 2018 will be placed using this proposed placement system.

- Community colleges that have implemented the statewide MMAP model all report students placing higher with little to no change in course success rates. We have no reason to believe that Mt. SAC will be different. The sooner we can implement this placement system, the better for students.

- It would be difficult to create a pilot that places enough students to get success data in all possible placed courses. We would need at least 1140 students (38 placement rule sets x 30 students per placement). It would be difficult for counselors, assessment staff, department staff, and division staff to determine which students have been placed by the pilot and which students have been placed by the traditional placement test. This could lead to confusing messages to students during the pilot.

- The use of high school performance data to place students will likely be mandated by the state (see AB 705).

2. Students with high school performance data will be placed into math courses based on their unweighted, cumulative high school GPA (either 11th or 12th), their last math course completed, the grade received in their last math course, and any math course they are currently enrolled in. See attached decision rules.

- Based on statewide data (looking at high school transcript data and community college course success rates), MMAP has determined a set of rules to place students based on high school performance data.

- We will use a rule set that is based on the MMAP model, with minor alterations. For example, we will require students to pass Algebra II or higher before allowing them to take Statistics (Math 110)—as compared with the original MMAP rule, which only requires Algebra I for placement into Statistics.

3. Students with high school performance data would not be required to take a placement test.

- Students will be encouraged to take a placement test if they feel that they have been inaccurately placed.

- Students without high school performance data will be required to take a placement test. They will also be encouraged to attend a Math Placement Test Info Session before taking the test.

- At Riverside City College, 84% of students placed via the MMAP rule sets were placed at the same level or higher than the placement test. For these students, the placement test offered no placement benefit. So, only 16% of students benefitted by taking a placement test.

- At Mt. SAC, about 78% of students placed via the proposed rule sets would be placed at the same or higher level as our placement tests. Only 23% of students would be placed higher by taking a placement test. These are conservative estimates based on a simplified decision rule set. The 78% would likely be higher and the 23% would likely be lower.

- More convenient for students (no need to schedule an appointment for an assessment). One less hurdle to overcome before starting college education. If a student is happy with their high-school-performance-based placement--especially if it leads them to the next logical math course--then why require them to take a placement test?

- Placement results would be available earlier, allowing for earlier orientations.

4. **Students with high school performance data who opt to take the placement test will be given the higher of the two placement results (that is, a disjunctive multiple measures model will be used).**

   - The MMAP representatives recommend implementing the disjunctive model because of its effectiveness and simplicity. Most (if not all) community colleges implementing MMAP have used a disjunctive model, and have reported positive results.

5. **Self-reported high school performance data will be used.**

   - Students must complete a Student Success Inventory before assessing, in which they self-report their GPA, last math course, and the grade they received in their last math course. Research about self-reported GPAs shows that they are largely accurate (see http://bit.ly/UCSelfReportGPA, http://bit.ly/CBSRGPA, http://bit.ly/ACTSRGPA).

   - CCCApply currently collects all of this data from students. Once we are able to import from CCCApply, we can use that data instead of our local Student Success Inventory.

   - We can also randomly verify this high school performance data using student transcripts. Furthermore, there is potential to acquire transcript data from California's centralized CalPASS Plus database (for the high schools in our district that submit their transcript data to it).

6. **High school performance data will not be required to be recent.**

   - Statewide research has shown that GPAs as old as 10 years are still correlated with student success better than placement tests.

7. **Students will be shown the highest course(s) that they place into.**

   - For example, if a student places into Math 71, they will be shown "Math 71, 71A, or 71X" and **not** "LERN 48, LERN 49, Math 50, Math 51/51A, Math 61, Math 70S, and Math 71/71A/71X."

   - Here is the full listing of what students will see for placing at each level:
     - 48/49 → Take Level 1 placement test
     - 50 → 50
     - 51 → 51, 51A, 70S
     - 71 → 71, 71A, 71X
     - 110 → 110
     - 11th-grade GPA
       - 120/130 → 110, 120, 130
       - 100 → 100, 110, 120, 130
     - 12th-grade GPA
       - 100 → 100, 110
       - 120/130 → 100, 110, 120, 130
     - 140/150 → 100, 110, 120, 140, 150
     - 160 → 160
     - 180 → 180

- This will avoid any confusion about which course they should take. Some community colleges (for example, Pasadena City College) have a course numbering system where lower numbers mean higher-level courses.

- Students always have the option to enroll in a lower-level course if they choose.

8. **Students placing into transfer-level courses will be strongly advised to seek counseling about which math course they should take.**

    - For example, suppose a STEM student places into Statistics (Math 110) based on high school performance data. It might be better for that student to take a math course on the STEM track, such as Math 71. Or it might be better for the student to take a placement test and place into Math 150. Counseling could help the student make these kinds of decisions.

9. **Prerequisite statements in the schedule of classes and catalog will be updated.**

    - For example, the prerequisite to Math 110 might read "MATH 71 or MATH 71X or MATH 71B or equivalent authorized placement." Currently, it states "MATH 71 or MATH 71X or MATH 71B or qualifying score on current department placement test." We will collaborate with the curriculum committee to work out the details and exact wording.

    - Messaging to students in the schedule of classes and catalog about requirements for course eligibility should be clear but not overly complex. There are many ways that students can gain eligibility for courses, and we should not attempt to detail all of them. GPA decision rules and other methods of eligibility (counselors, department chair, petitions, AP/IB tests, etc.) will not be mentioned.

10. **The Student Success Inventory will be updated to accommodate this new placement system.**

    - We will need to collect more detailed information from students, including:
        - Plus and minus grades (for example, B+ and B-)
        - Separate options for Trigonometry and Precalculus
        - Options for Statistics and Integrated Math 1, 2, 3, and 4
        - Option for "I don't have a high school GPA" (these students would be required to take a placement test)
        - A way to determine if the GPA is an 11^{th}-grade GPA or a 12^{th}-grade GPA
        - An option to select their highest math course currently enrolled in (if any)

11. **Research will be done to determine if the new placement system is effective.**

    - We will determine placement distributions for Fall 2016, Fall 2017, and Fall 2018 to compare the differences between the new and old placement systems. We will also compare the number of students who received placements (which should increase with this new placement system, since most students will get a placement immediately after applying—without making an appointment for a placement test). This can be done near the beginning of the Fall 2018 semester.

    - We will determine course success rates for students making their first attempt at a math course after placement in Fall 2016, Fall 2017, and Fall 2018. This can be done after Fall 2018 grades are inputted.

    - We will analyze transfer-level completion rates.

Data from California Community Colleges

College	**Placement System**	**Change in % of students who place into transfer-level Math**	**Change in success rates**
San Diego CCD	MMAP (but all math levels at or above Stats cleared using Stats rule set)	28% → 40%	60% → 58%
Cañada College	MMAP	37% → 47%	67% → 68%
Norco College	MMAP	6.1% → 32.8%	59% → 58%
Merritt College	MMAP (with local variations)	?	75% → 71%
Laney College	MMAP (with local variations)	?	79% → 77%
College of Alameda	MMAP (with local variations)	?	85% → 79%
Berkeley College	MMAP (with local variations)	?	51% → 46%
Santa Monica College	MMAP (with conservative modifications)	24.6% → 43.1%	?
Bakersfield College	MMAP	3-12% → 34%	?