Rio Hondo College Placement Pilot

Overview & Lessons Learned
Overview

• Participation in MMAP Pilot
• Phase 1.0 elements
  – Process/Strategy
  – Results
  – Lessons Learned
• Phase 2.0 elements
  – Process/Strategy
  – Targets
Phase 1.0: Process/Strategy

- Students came to Rio Hondo College placing at high rates in “remedial” level classes

- Completing college level courses in ENGL and MATH indicator of student completion and success, but placement below these courses creates barriers

- Using multiple measures is key in helping students advance with their completion of gatekeeper courses (College level ENGL & Transfer MATH)
Phase 1.0: Process/Strategy

- Spring Semester 2015
  - Sample drawn from 14 counseling courses taught at feeder high schools
  - Additionally, data analysis by third party group
    - Algorithm for placement in to Math was created by our IT dept. in conjunction with the data provided by California College Guidance Initiative (CCGI)
Phase 1.0: Process/Strategy

- 597 student transcripts were analyzed
- Of the 597 students, 367 students qualified for a higher math class after transcripts were analyzed
- Of the 597, 385 students enrolled in a math course (whether they moved up or not)
- All data was streamlined and integrated into our Banner system at RHC
- We sent targeted emails to students with information about their new math placement
Dear Student,

Welcome to Rio Hondo College. Based on an evaluation of your high school transcript and the use of multiple measures your math course is: **Math 70 Intermediate Algebra**

Do not miss out on your priority registration. Take full advantage of this opportunity by enrolling in math and English courses.

Rio Hondo College will be hosting priority registration labs, please see below for more information:

**Wednesday, July 8, 2015**

**Rio Hondo College**

Student Services bldg. room SS305

8:00 a.m. to 6:00 p.m.

Or

A local high school listed below from 8:00 a.m. to 4:00 p.m.

<table>
<thead>
<tr>
<th>El Monte H.S.</th>
<th>Pioneer H.S.</th>
<th>Whittier H.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Center</td>
<td>New Horizons Office</td>
<td>New Horizons Office</td>
</tr>
<tr>
<td>3049 Tyler Ave</td>
<td>10800 E. Benayon St.</td>
<td>12417 Philadelphia St.</td>
</tr>
<tr>
<td>El Monte 91731</td>
<td>Whittier 90606</td>
<td>Whittier 90601</td>
</tr>
</tbody>
</table>

Registration times are assigned by the FIRST letter of your LAST name:

<table>
<thead>
<tr>
<th>8:00 a.m.</th>
<th>11:00 a.m.</th>
<th>2:00 p.m.</th>
<th>5:00 p.m.</th>
</tr>
</thead>
</table>
Dear Student,

Congratulations you are eligible to enroll in a transferable math course that has a Math 70 pre-requisite (for questions please see a counselor). This information can be found on the course description section in the online class schedule or in the college catalog.

Your new recommended math class is **Math 130: Statistics (non-STEM majors)**

*If you are a science, technology, engineering, mathematics (STEM) major please meet with a counselor to identify your appropriate college level math. [http://www.riohondo.edu/mesa/](http://www.riohondo.edu/mesa/)*

**Wednesday, July 8, 2015**

**Rio Hondo College**

**Student Services bldg. room SS305**

8:00 a.m. to 6:00 p.m.

Or

A local high school listed below from 8:00 a.m. to 4:00 p.m.
## Phase 1.0: Analysis

### MMAP Combined Fall 2015

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>51.4%</td>
</tr>
<tr>
<td>ENGL/ENLA</td>
<td>75.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55.8%</strong></td>
</tr>
</tbody>
</table>
Phase 1.0: Lessons Learned

• Only **one** assessment placement should be presented to students
  – Multiple Assessment Result Confusion
  – Students received more than one placement

• Students believed that Accuplacer was a better indicator of performance
  – Math Efficacy Issues
  – Students chose not take a bump
  – Students chose take a course in between Accuplacer placement and MMAP placement

• Buy in from discipline faculty
  – Support generated only after faculty participation in CAI Professional Development Opportunities
Phase 2.0: Process/Strategy

- Spring Semester 2016
  - Sample to be drawn from 35 counseling courses to be taught at feeder high schools
  - Transcript data extraction via Cal-PASS Plus
    - Algorithms for placements in ENGL, ESL, READ, & MATH were created by our IT department
    - Five feeder high school districts participating in data extraction
  - Two assessments, ONE placement
    - Two back-end forms (Accuplacer Results & MMAP Results), ONE placement form for students.
Phase 2.1: Placement
Results for English

Results for English

Table 1 shows a 26.4% increase in the number students placing into ENGL101 (transfer-level English). Based on the RHC standardized assessment (i.e., Accuplacer), 159 or 36.5% of these students would have placed into ENGL101. With the inclusion of high school transcript data, that number increased to 274 or 62.8%. The increase was 115 students or 26.4%. The related decreases in placements into ENGL035 and ENGL030 were 17.7% and 8.7%, respectively.

Table 1) MMAP English Course Comparison

<table>
<thead>
<tr>
<th>Course</th>
<th>RHC Results</th>
<th>MMAP Results</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>ENGL101</td>
<td>159</td>
<td>36.5%</td>
<td>274</td>
</tr>
<tr>
<td>ENGL035</td>
<td>193</td>
<td>44.3%</td>
<td>116</td>
</tr>
<tr>
<td>ENGL030</td>
<td>84</td>
<td>19.3%</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>436</td>
<td>100.0%</td>
<td>436</td>
</tr>
</tbody>
</table>
Phase 2.1: Placement
Results for Math

Table 3 shows a 31.6% increase in the number students placing into transfer-level Math. (Additional analysis will be necessary to tabulate the specific transfer-level courses.) Due to the disjunctive model placing students no lower than three levels below transfer, there were no students placing into MATH20. This resulted in a 5.1% increase in the number of students placing into MATH030. MATH070 and MATH050 would have lower enrollment with multiple measures. **Table 3) MMAP Math Course Comparison**

<table>
<thead>
<tr>
<th>Course</th>
<th>RHC Results</th>
<th>MMAP Results</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Transfer</td>
<td>4</td>
<td>1.1%</td>
<td>115</td>
</tr>
<tr>
<td>MATH070</td>
<td>95</td>
<td>27.1%</td>
<td>75</td>
</tr>
<tr>
<td>MATH050</td>
<td>166</td>
<td>47.3%</td>
<td>125</td>
</tr>
<tr>
<td>MATH030</td>
<td>18</td>
<td>5.1%</td>
<td>36</td>
</tr>
<tr>
<td>MATH020</td>
<td>68</td>
<td>19.4%</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100.0%</td>
<td>351</td>
</tr>
</tbody>
</table>
Phase 2.1: Process/Strategy

- Procedure Modification
  - Self-reported Data
    - Based on results from CAI PD event presentation
  - Created Placement Tool
Phase 2.1: Placement Tool
Phase 2.1: Placement Tool

- 1291 Completed Forms
- 782 students that received MM Placement
  - 683 Transfer Level English
  - 99 One-level below
- 1347* students that received MM Placement
  - 564 Transfer Level Math
  - 783 Developmental
- *Some students did not complete Placement Tool, but met counselor to assess for MM placement
Phase 2.1: Lessons Learned

- Rio Hondo College has eliminated the disproportionate impact of college level math placement for Hispanic and African American Students.
- Minimal level (2%) of disproportionate impact of college level English placements for Asian students
- Waiting Game…
MMAP Team

- Dr. Mike Munoz, Dean of Counseling (Project Lead)
  - mrmunoz@riohondo.edu
- Julio Flores, CAI/MMAP Counselor Lead
  - jflores@riohondo.edu
- Ryan Khamkongsay, SSSP Data Specialist
  - rkhamkongsay@riohondo.edu
Rio Hondo College Multiple Measures Pilot Placement Rules (Phase II)

Direct Matriculants
(Student enrolls with no more than one semester lapse from HS graduation)

This document summarizes the rule sets from Phase II of the Multiple Measures Assessment Project (MMAP). The rules can be used to inform placement of students for whom high school performance data is available (up to 9 years from the student’s graduation date), and may include self-reported GPA. Additionally, rule sets are designed to be used disjunctively with assessment testing data and provide the student with the higher (or “better”) placement. When analyzing a student’s transcripts, high school performance is considered an unweighted cumulative GPA.

<table>
<thead>
<tr>
<th>CODES</th>
<th>Course Placement</th>
<th>Pre-requisites Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC30</td>
<td>HS30 Math 30</td>
<td>Cumulative HS 11 GPA: 2.0-2.39</td>
</tr>
<tr>
<td>CC50</td>
<td>HS50 Math 50</td>
<td>Cumulative HS 11 GPA: 2.4-2.79</td>
</tr>
<tr>
<td>CC60</td>
<td>HS060 Math 060</td>
<td>For prospective STEM students who have not completed Geometry, MUST qualify for MATH 070</td>
</tr>
<tr>
<td>CC70</td>
<td>HS70 Math 70</td>
<td>Cumulative HS 11 GPA: 2.8 or better -&amp;- successful completion of Algebra I (or better)</td>
</tr>
<tr>
<td>CC13</td>
<td>HS13 Math 130 PSY 190</td>
<td>Cumulative HS 11 GPA: 3.0 or Above -&amp;- successful completion of Algebra II* (or better)</td>
</tr>
<tr>
<td>CC16</td>
<td>HS16 Math 160</td>
<td>Cumulative HS 11 GPA: 3.2 or Above -&amp;- successful completion of Algebra II (or better)</td>
</tr>
<tr>
<td>CC17</td>
<td>HS17 Math 175</td>
<td>Cumulative HS 11 GPA: 3.4 or Above -&amp;- successful completion of Algebra II (or better)</td>
</tr>
<tr>
<td>CC18</td>
<td>HS18 Math 180 Math 170</td>
<td>Cumulative HS 11 GPA: 3.4 or Above -&amp;- successful completion of Algebra II (or better)</td>
</tr>
<tr>
<td>CC19</td>
<td>HS19 Math 190</td>
<td>Cumulative HS 11 GPA: 3.6 or Above -&amp;- successful completion of Pre-Calculus or Trigonometry (or better)</td>
</tr>
<tr>
<td>CC35</td>
<td>HS35 ENGL 35 +35W</td>
<td>Cumulative HS 11 GPA: 2.3 - 2.59</td>
</tr>
<tr>
<td>CC01</td>
<td>HS01 ENGL 101</td>
<td>Cumulative HS 11 GPA: 2.6 or Above</td>
</tr>
<tr>
<td>CC22</td>
<td>HS22 READ 22 +22L</td>
<td>Cumulative HS 11 GPA: 1.9 - 2.29</td>
</tr>
<tr>
<td>CC23</td>
<td>HS23 READ 23</td>
<td>Cumulative HS 11 GPA: 2.3 - 2.79</td>
</tr>
<tr>
<td>CC02</td>
<td>HS02 READ 101</td>
<td>Cumulative HS 11 GPA: 2.8 or Above</td>
</tr>
<tr>
<td>CC24</td>
<td>HS24 ENLA 24</td>
<td>Cumulative HS 11 GPA: 1.3 - 1.49</td>
</tr>
<tr>
<td>CC34</td>
<td>HS34 ENLA 34</td>
<td>Cumulative HS 11 GPA: 1.5 - 2.49</td>
</tr>
<tr>
<td>CC00</td>
<td>HS00 ENLA 100</td>
<td>Cumulative HS 11 GPA: 2.5 or Above</td>
</tr>
</tbody>
</table>
Rio Hondo College Multiple Measures Pilot Placement Rules (Phase II)

Non-Direct Matriculants
(Student enrolls with more than one semester lapse from HS graduation)

This document summarizes the rule sets from Phase II of the Multiple Measures Assessment Project (MMAP). The rules can be used to inform placement of students for whom high school performance data is available (up to 9 years from the student’s graduation date), and may include self-reported GPA. Additionally, rule sets are designed to be used disjunctively with assessment testing data and provide the student with the higher (or “better”) placement. When analyzing a student’s transcripts, high school performance is considered an unweighted cumulative GPA.

<table>
<thead>
<tr>
<th>CODES</th>
<th>Course Placement</th>
<th>Pre-requisites Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC30</td>
<td>HS30 Math 30</td>
<td>Math 30; Math 20</td>
</tr>
<tr>
<td>CC50</td>
<td>HS50 Math 50</td>
<td>Math 50; Math 30; Math 20</td>
</tr>
<tr>
<td>CC60</td>
<td>HS60 Math 060</td>
<td>MATH 060; Math 50; Math 30; Math 20</td>
</tr>
<tr>
<td>CC70</td>
<td>HS70 Math 70</td>
<td>Math 70; Math 50; Math 30; Math 20</td>
</tr>
<tr>
<td>CC13</td>
<td>HS13 Math 130 PSY 190</td>
<td>Math 130; Math 70; Math 50; Math 30; Math 20; PSY 190</td>
</tr>
<tr>
<td>CC16</td>
<td>HS16 Math 160</td>
<td>Math 160; Math 130; Math 70; Math 50; Math 30; Math 20; PSY 190</td>
</tr>
<tr>
<td>CC17</td>
<td>HS17 Math 175</td>
<td>Math 175; Math 160; Math 130; Math 70; Math 50; Math 30; Math 20; PSY 190</td>
</tr>
<tr>
<td>CC18</td>
<td>HS18 Math 180 Math 170</td>
<td>Math 180; Math 175; Math 170; Math 160; Math 130; Math 70; Math 50; Math 30; Math 20; PSY 190</td>
</tr>
<tr>
<td>CC19</td>
<td>HS19 Math 190</td>
<td>Math 190; Math 180; Math 175; Math 170; Math 160; Math 130; Math 70; Math 50; Math 30; Math 20; PSY 190</td>
</tr>
<tr>
<td>CC35</td>
<td>HS35 ENGL 35 +35W</td>
<td>English 35 + English 35W</td>
</tr>
<tr>
<td>CC01</td>
<td>HS01 ENGL 101</td>
<td>English 101; English 35 + English 35W</td>
</tr>
<tr>
<td>CC22</td>
<td>HS22 READ 22 +22L</td>
<td>Reading 22 + Reading 22L</td>
</tr>
<tr>
<td>CC23</td>
<td>HS23 READ 23</td>
<td>Reading 23; Reading 22 + Reading 22L</td>
</tr>
<tr>
<td>CC02</td>
<td>HS02 READ 101</td>
<td>Reading 101; Reading 23; Reading 22 + Reading 22L</td>
</tr>
<tr>
<td>CC24</td>
<td>HS24 ENLA 24</td>
<td>ENLA 24</td>
</tr>
<tr>
<td>CC34</td>
<td>HS34 ENLA 34</td>
<td>ENLA 34; ENLA 24</td>
</tr>
<tr>
<td>CC00</td>
<td>HS00 ENLA 100</td>
<td>ENLA 100; ENLA 34; ENLA 24</td>
</tr>
</tbody>
</table>

Rev. 6/7/16 (J.Flores)
MMAP in English
MiraCosta College

Bridget Herrin,
Research Analyst
Our process

Began conducting research into our placement processes in Spring 2015
Presented results along and MMAP studies to department
Found and worked with allies
Invited MMAP researcher, Dr. Hetts in November
Implemented modified MMAP rules 11/25/2015
Included MMAP informed assessment/placement into EVERY plan we could
(SSSP, Equity, Basic Skills, Achieving the Dream... )
Version 1-English

Old Model

All students are directed to eCOMPASS
English or ESL exam
eCOMPASS assessment completed
High School GPA and grade in last
English course utilized as supplemental measure

New Model

Assessment office prescreens students with a questionnaire which directs to the following assessment options:

1. Exempt from eCOMPASS and eligible for Transfer English
2. Directed to eCOMPASS
3. Directed to ESL assessment

If the following criteria are met students are exempt from taking eCOMPASS and recommended for Transfer English

3.0 overall HSGPA + 3 yrs Eng. (CA only)
OR
2.5 overall HSGPA + B in Eng. (CA only)
<table>
<thead>
<tr>
<th>ENGLISH PLACEMENT QUESTIONNAIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Have you recently graduated from high school or are you in your junior or senior year?</strong></td>
</tr>
<tr>
<td>If YES to either of these questions you may be eligible for the Multiple Measures for Placement into college-level English courses. Go to the next question.</td>
</tr>
<tr>
<td><strong>Did you take all English courses in high school?</strong></td>
</tr>
<tr>
<td>If YES, go to the next question.</td>
</tr>
<tr>
<td><strong>Is or was your cumulative, unweighted high school GPA 3.0 or higher?</strong></td>
</tr>
<tr>
<td>If YES, you are eligible to enroll in ENGL 100. You must submit your high school transcript to <a href="mailto:testing@miracosta.edu">testing@miracosta.edu</a>.</td>
</tr>
<tr>
<td><strong>Is or was your cumulative, unweighted high school GPA 2.5 – 2.9 and you had a B or better in your 11th grade or 12th grade English composition course?</strong></td>
</tr>
<tr>
<td>If YES, you are eligible to enroll in ENGL 100. You must submit your high school transcript to <a href="mailto:testing@miracosta.edu">testing@miracosta.edu</a>.</td>
</tr>
</tbody>
</table>
Challenges

Training testing center staff, admissions staff

• Understanding the utilization of the HS transcript

Divided beliefs around the efficacy of using HS information for placement

Ever-changing policies and consistent information

• self-report vs. transcript verified

• Use of GPA

Impact on Basic Skills course offerings
Results
Version 1

YEA, IF YOU COULD JUST SURRENDER TO THE FORCE

THAT'D BE GREAT

Increase of 14%

N=200
N=423
N=1,523

2,146 students assessed under new model
Implementation-Placement method used

- Directed to eCOMPASS: 44.4%
- Placed into Transfer Level English via MMAP Rules: 55.6%

eCOMPASS
- ENGL49: 44
- ENGL50: 21
- ENGL100: 35
Equity Implications

Transfer Level Placement by Ethnicity

- American Indian/Alaska Native: -19% Old Model, +10% New Model
- Asian: 66% Old Model, 76% New Model
- Black/African American: 44% Old Model, 58% New Model
- Hispanic/Latino: 42% Old Model, 62% New Model
- Pacific Islander: 47% Old Model, 63% New Model
- Unknown: 58% Old Model, 72% New Model
- White: 69% Old Model, 83% New Model
Course Success English 100 Spring terms
Course Success English 100 Spring 2016

- Success:
  - Old Model/None: 66
  - New Model-HSGPA: 68
  - New Model-COMPASS: 73
  - Average: 67
  - N=1,237

- No Success:
  - Old Model/None: 14
  - New Model-HSGPA: 12
  - New Model-COMPASS: 14
  - Average: 14
  - N=131

- Withdrawal:
  - Old Model/None: 20
  - New Model-HSGPA: 21
  - New Model-COMPASS: 14
  - Average: 20
  - N=44

- N=1,412
Version 2-English Self-Informed Placement

Previous Academic Performance
- HS GPA
- Course Grade
- EAP

Self Assessment of skill
- Questions based on ENGL50 COR

Information
- Sequence information
- Course information
- What to Expect

Self Selection

Populated from CCCApply and soon from EAP data
- Questions with confidence ratings from 0-4
- Tracking time looking at this info
- Are students deferring to recommendations?
Version 2: Recommendation Guidelines

1. EAP (align with CSU)
   1. Transfer English recommendation:
      1. Level 4-Exceeds Standard
      2. Level 3-Met Standard + pass ERWC/ENG12

2. HS GPA
   1. Transfer English recommendation:
      1. 2.8 + 3 years English
      2. 2.5 + B
   2. 1 Level below
      1. 2.4 + C in English

3. Self-Assessment
   1. Transfer: 3.5-4
   2. 1 level below: 2.0-3.4
<table>
<thead>
<tr>
<th>GPA</th>
<th>Passed Course</th>
<th>Course Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>No math</td>
<td>Three levels below transfer</td>
</tr>
<tr>
<td>2.3</td>
<td>Algebra II</td>
<td>Two levels below transfer</td>
</tr>
<tr>
<td>2.5</td>
<td>No math</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>Pre Calc</td>
<td>One level below transfer</td>
</tr>
<tr>
<td>2.9</td>
<td>Algebra I</td>
<td></td>
</tr>
<tr>
<td>2.6</td>
<td>Pre Calc</td>
<td></td>
</tr>
<tr>
<td>2.8</td>
<td>Pre Calc</td>
<td></td>
</tr>
<tr>
<td>2.9</td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>Calculus</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>Pre Calc or Stats</td>
<td>Transfer Level</td>
</tr>
<tr>
<td>3.0</td>
<td>Algebra I</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Algebra II</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Algebra I</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Algebra II</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Calculus</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Pre Calc or Trig</td>
<td></td>
</tr>
</tbody>
</table>
THE FORCE IS CALLING TO YOU.

JUST LET IT IN.
Questions?

Bridget Herrin: Research Analyst
bherrin@miracosta.edu
Lisa Menuck: Testing Director
lmenuck@miracosta.edu
MMAP at SMC
In-Person Convening – Irvine Valley College

December 9, 2016
HOW OUR PROCESS DEVELOPED
WHAT IS IT?

1. Multiple Measures ≠ Using HS data in placement ≠ MMAP
   • But they are often used interchangeably
   • And none of these are the same as the Common Assessment Initiative

2. MMAP is a COMPLETION initiative, not a SUCCESS initiative.

3. MMAP is not going to replace other forms of assessment. (Then it would not be “multiple” anymore.)
CAMPUS

• It did not happen overnight.

• We were mostly sold on using HS data in CC placement, but...
  • Without a dominant feeder high school, getting HS data was difficult
  • Availability of data through CAL-Pass made it possible

• The MMAP team presented to SMC on the MMAP project to a group including Counseling, Managers, Dept. Chairs
  • We tried to take our presentation cues from them in campus discussions
MATH AND ENGLISH DEPARTMENTS

- IR and Assessment met with the Math and English department faculty multiple times to discuss MMAP in general and what it could look like at SMC.

- First visited English and Math department meetings to describe the MMAP initiative and seek feedback.
  - Had good questions, seemed open to the prospect
  - Feedback was mixed, as expected.
  - More visits might have helped

- Later visited Math and English small group “assessment teams”
BUY-IN

• This is complex and unfamiliar approach
  • Test scores are imperfect measures of ability, but for years they were all we had
  • More check-ins or discussions might have made adoption easier

• The Math and English chairs were in a difficult position
  • There were a lot of questions about how the process would work
  • Faculty were concerned about maintaining the same level of quality of instruction with the new, and potentially different, students
  • We received a lot of questions, and our chairs received even more from their compatriots
IR AND ASSESSMENT

• Watched the RP/CCCO webinars (again... and again...) and generated the CART trees to start our conversation about placement levels, using the CAL-Pass data.
  • http://www.cccconfer.org/Meetings/Recordings

• Compared success rates predicted by the CART models to 3yr historical success for each placement level.
  • Using predicted success rates, as opposed to predicted Grade Points made it easier to describe and act on.
MODEL SELECTION

• Initially, any placement criteria that was predicted to have a success rate higher than the historical average was included in the models.

• Faculty SMEs reported some hesitance to make such a substantive shift, so we generated a more conservative approach, which was ultimately adopted.

• The placement criteria is not continuous.
## CHANGES IN PLACEMENT

### ENGLISH

<table>
<thead>
<tr>
<th>If 11th Grade GPA was:</th>
<th>Place student into:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=3.1</td>
<td>Transfer English</td>
</tr>
<tr>
<td>&gt;=2.9 and &lt;3.1</td>
<td>English Fundamentals</td>
</tr>
<tr>
<td>&lt;2.9</td>
<td>Reading &amp; Writing</td>
</tr>
<tr>
<td>If 11th Grade GPA was:</td>
<td>&amp; Last Math Course taken was:</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>&gt;=3.3</td>
<td>Calculus*, Pre-Calculus*</td>
</tr>
<tr>
<td>&gt;=3.3</td>
<td>Algebra 2* or Integrated Math 3* or Trigonometry</td>
</tr>
<tr>
<td>&gt;=2.9 and &lt;3.3</td>
<td>Calculus*, Pre-Calculus or Integrated Math 3*</td>
</tr>
<tr>
<td>&gt;=2.6 and &lt;2.9</td>
<td>Calculus*, Pre-Calculus or Integrated Math 3*</td>
</tr>
<tr>
<td>&gt;=3.1</td>
<td>Algebra 1* or Statistics* or Integrated Math 2* or Geometry</td>
</tr>
<tr>
<td>&gt;=3.0</td>
<td>Pre-Algebra* or Integrated Math 1*</td>
</tr>
<tr>
<td>&gt;=2.3</td>
<td><em>Placement based on GPA only—if students do not report last course taken and grade received</em></td>
</tr>
<tr>
<td>&lt;2.3</td>
<td></td>
</tr>
</tbody>
</table>
ROLL OUT

• Placement under the new model started with students who assessed in Spring/Summer 2016 for Enrollment in Summer/Fall 2016.

• Our first group of students who were placed using these models is currently finishing their first semester.

• We will have better data on outcomes in Spring or Summer 2017. And even more so in 3+ years.
INITIAL OUTCOME INFORMATION

To date, 6,047 students have received a placement using the Multiple Measures Rules sets

- 2,444 Students’ math placement increased by at least one placement*
- 1,320 Students’ English placement increased by at least one placement*

*English placement spans 3 possible placements, while Math placement spans 8 possible placements.
Placement into Transfer Level English

<table>
<thead>
<tr>
<th></th>
<th>Pre-Transfer Level</th>
<th>Transfer Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Only</td>
<td>72.8%</td>
<td>27.2%</td>
</tr>
<tr>
<td>MM Only</td>
<td>65.9%</td>
<td>34.1%</td>
</tr>
<tr>
<td>Test &amp; MM</td>
<td>55.6%</td>
<td>44.4%</td>
</tr>
</tbody>
</table>
Placement into Transfer Level Math

<table>
<thead>
<tr>
<th></th>
<th>Test Only</th>
<th>MM Only</th>
<th>Test &amp; MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Transfer Level</td>
<td>75.4%</td>
<td>63.1%</td>
<td>56.9%</td>
</tr>
<tr>
<td>Transfer Level</td>
<td>24.6%</td>
<td>36.9%</td>
<td>43.1%</td>
</tr>
</tbody>
</table>

Pre-Transfer Level
Transfer Level
Linear (Transfer Level)
AND SO...

1. Make clear to everyone this is a COMPLETION initiative, not a SUCCESS initiative.
   • A flat success rate is actually an indication of success

2. We are just getting started with multiple measures.
   • We are going to need to keep checking in and making changes if we see a problem

3. This process can be tailored to each campus
Automating Multiple Measures in Accuplacer

Bakersfield College – Bakersfield, California

Sue Vaughn, Director of Enrollment Services
Janet Fulks, Interim Dean of Institutional Effectiveness
Process and Scale-up

- 2014 First Cohort 500 student cohort made up of students attending high schools
- Compass testing moved to high school locations (9)
- Transcripts reviewed by hand

- 2015 Second Cohort 1600 students
- Accuplacer (web-based) and built algorithm

- 2016 Third Cohort all students About 8000
- English algorithm and math filter to counselor
Bakersfield College - Reading Placement using Multiple Measures: All Students Fall 2016

N=2594
Bakersfield College - Change in Reading Placement using Multiple Measures: All Students Fall 2016

Did Not Move 1523
One Level 470
Two Levels 72
Three Levels 32

N=2097
Reading Placement 2013-16

Percent placed at specific levels

<table>
<thead>
<tr>
<th>Year</th>
<th>4 levels before transfer</th>
<th>three levels before transfer</th>
<th>two levels before transfer</th>
<th>one level before transfer</th>
<th>Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>7%</td>
<td>11%</td>
<td>11%</td>
<td>13%</td>
<td>57%</td>
</tr>
<tr>
<td>2014</td>
<td>11%</td>
<td>11%</td>
<td>8%</td>
<td>11%</td>
<td>59%</td>
</tr>
<tr>
<td>2015</td>
<td>0%</td>
<td>9%</td>
<td>37%</td>
<td>37%</td>
<td>17%</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
<td>5%</td>
<td>9%</td>
<td>18%</td>
<td>68%</td>
</tr>
</tbody>
</table>
Bakersfield College - Change in English Placement using Multiple Measures: All Students Fall 2016

- Did Not Move: 54%
- One Level: 39%
- Two Levels: 6%
- Three Levels: 1%

N=2044
### English Placement BC 2013-2016

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four Levels Below</td>
<td>11%</td>
<td>8%</td>
<td>0</td>
<td>1%</td>
</tr>
<tr>
<td>Three Levels Below</td>
<td>37%</td>
<td>35%</td>
<td>0</td>
<td>12%</td>
</tr>
<tr>
<td>Two Levels Below</td>
<td>6%</td>
<td>6%</td>
<td>4%</td>
<td>33%</td>
</tr>
<tr>
<td>One Level Below</td>
<td>17%</td>
<td>19%</td>
<td>75%</td>
<td>33%</td>
</tr>
<tr>
<td>Transfer Level</td>
<td>29%</td>
<td>31%</td>
<td>22%</td>
<td>54%</td>
</tr>
</tbody>
</table>
Bakersfield College - Math Placement using Multiple Measures: All Students Fall 2016

- Transfer Level: 34%
- One Level Below: 24%
- Two Levels Below: 33%
- Three Levels Below: 7%
- Four Levels Below: 2%

N=2660
### Math Placement 2013-2016

<table>
<thead>
<tr>
<th>Year</th>
<th>4 levels</th>
<th>three levels</th>
<th>two levels</th>
<th>one level</th>
<th>Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>35%</td>
<td>35%</td>
<td>21%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>2014</td>
<td>33%</td>
<td>18%</td>
<td>30%</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>2015</td>
<td>6%</td>
<td>46%</td>
<td>25%</td>
<td>16%</td>
<td>7%</td>
</tr>
<tr>
<td>2016</td>
<td>2%</td>
<td>24%</td>
<td>33%</td>
<td>7%</td>
<td>34%</td>
</tr>
</tbody>
</table>
Bakersfield College - Change in Math Placement using Multiple Measures: All Students Fall 2016

- Did Not Move: 63%
- One Level: 19%
- Two Levels: 12%
- Three Levels: 6%
- Four Levels: 0%

N=2658
What We Learned From the Process

Simplify your algorithm
• What we found about an algorithm
  • You must have a pattern that you follow
    • Test score (roof and floor)
    • Additional test scores (roof and floor)
    • GPA (floor)
    • Additional factors – exclusion metrics e.g. if English 1A then no Reading or ESL
  • The algorithm is entered for every course e.g. with multiple courses at a single CB21 level – accelerated and traditional, learning communities or special courses
  • You need to consider all the constraints to narrow someone to the right placement

Considerations
Added Efficiency - Success – we are able to organize students that need a greater touch or evaluation.
ENGL B1A - Expository Composition

Type: Classic

Rule #1

IF

1.0 times the score of BC WritePlacer Test is $\geq 6$
OR

1.0 times the score of WritePlacer ENSL is $\geq 6$
OR

the value of user-defined field High School GPA is $\geq 2.6$

Then

Course Placement is **ENGL B1A Expository Composition**
Interaction between:
ESL Reading English
### Test Results

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Algebra</td>
<td>69</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>90</td>
</tr>
<tr>
<td>WritePlacer</td>
<td>4</td>
</tr>
</tbody>
</table>

### Course Placements

**MATH B60 Beginning Algebra**  
MATH B60 - Beginning Algebra

**MATH B65 Intermediate Algebra for Statistics**  
Course is designed for non-STEM majors.

**Multiple Measures Applied**

**READING Adv. Reading & Critical Thinking**  
ACDV B50 - Advanced Reading and Critical Thinking

**WRITING ENGL Writing Exp**  
LRNC B510 - ENGL Writing Express  
Combines ENGL B50 and B1A in one term

**WRITING Intro. to College Composition**  
ENGL B50 Introduction to College Composition

**WRITING Rdg., Reasoning & Writing**  
ENGL B53 - Reading, Reasoning, and Writing  
Combines ENGL B50 and ENGL B50 in one term
## Reading Decision Rules for Schools with a Top Reading Level of One-Level Below

<table>
<thead>
<tr>
<th>Level</th>
<th>Direct Matriculants (Up through 11th grade)</th>
<th>Non-Direct Matriculants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Out</td>
<td>HS 11 GPA &gt;= 2.8</td>
<td>HS 12 GPA &gt;= 2.5</td>
</tr>
<tr>
<td>One-level below</td>
<td>HS 11 GPA &gt;= 2.3</td>
<td>HS 12 GPA &gt;= 2.0 AND HS 12 English course C+ (or better)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HS 12 GPA &gt;= 2.0 AND CST &gt;= 274</td>
</tr>
<tr>
<td>Two-levels below</td>
<td>HS 11 GPA &gt;= 1.9</td>
<td>HS 12 GPA &gt;= 1.7 AND HS 12 English course D+ (or better)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CST English &gt;= 310*</td>
</tr>
<tr>
<td>Three-levels below</td>
<td>Placement via test</td>
<td>HS 12 GPA &gt;= 2.1*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CST English &gt;= 234*</td>
</tr>
<tr>
<td>Four-levels below</td>
<td>Everyone else</td>
<td>Everyone else</td>
</tr>
</tbody>
</table>

Note: placement via test = too few cases available to grow decision trees or rules
* Based on a minimum of three years of high school data; to increase sample size, some cases are missing 9th or 10th grade data.
<table>
<thead>
<tr>
<th>Test Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Algebra</td>
<td>69</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>90</td>
</tr>
<tr>
<td>Writeplacer</td>
<td>4</td>
</tr>
</tbody>
</table>

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---

**Reading and English and ESL interaction**
### Building the Algorithm

```plaintext
<table>
<thead>
<tr>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF</td>
</tr>
<tr>
<td>(</td>
</tr>
<tr>
<td>(</td>
</tr>
<tr>
<td>(</td>
</tr>
<tr>
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<td>(</td>
</tr>
<tr>
<td>(</td>
</tr>
</tbody>
</table>
```
<table>
<thead>
<tr>
<th>Condition</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Times the score of BC WritePlacer Test - WritePlacer</td>
<td>1.0</td>
<td></td>
<td>equal to 5</td>
</tr>
<tr>
<td>Times the score of WritePlacer ENSL - WritePlacer</td>
<td>1.0</td>
<td></td>
<td>equal to 5</td>
</tr>
<tr>
<td>Times the value of user-defined field</td>
<td></td>
<td></td>
<td>greater than or equal to 2.3</td>
</tr>
<tr>
<td>Times the value of user-defined field</td>
<td></td>
<td></td>
<td>greater than 2.6</td>
</tr>
<tr>
<td>Times the score of BC WritePlacer Test - WritePlacer</td>
<td>1.0</td>
<td></td>
<td>less than 6</td>
</tr>
</tbody>
</table>

Current conundrum
What We Learned From the Process

• Colleges will need support on the algorithm
• Colleges will need a direct line to high school grades
• Colleges will need dedicated champions and expertise
• If you use the senior grade, then currently CalPASS cannot provide
• Devise a plan that can get grades and upload
• High Schools are ecstatic and will want to do all they can (it was a real image booster as we reached out)
• Accuplacer has gotten better and can help but still has issues
• This is developed by each individual course so makes course to course interactions very complicated (Reading; English; ESL)
• The type of college level math is dependent on major needs a discussion
• We have found if the parentheses are incorrect the logic is messed up
• BC does not want lower classes to print encouraging students to appropriate level (with support if needed)
• Last lesson – Accuplacer allows us to eliminate lower classes based upon a score but not based upon a GPA
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N=2044

Success