Multiple Measures in Assessment and the Re-imagination of Student Capacity

(additional resources at end)

AACC June Pathways Institute

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http://bit.ly/AACCMM

John J. Hetts, Ph.D.
Senior Director of Data Science
jhetts@edresults.org
@jjhetts #LetIcarusFly

They had one job

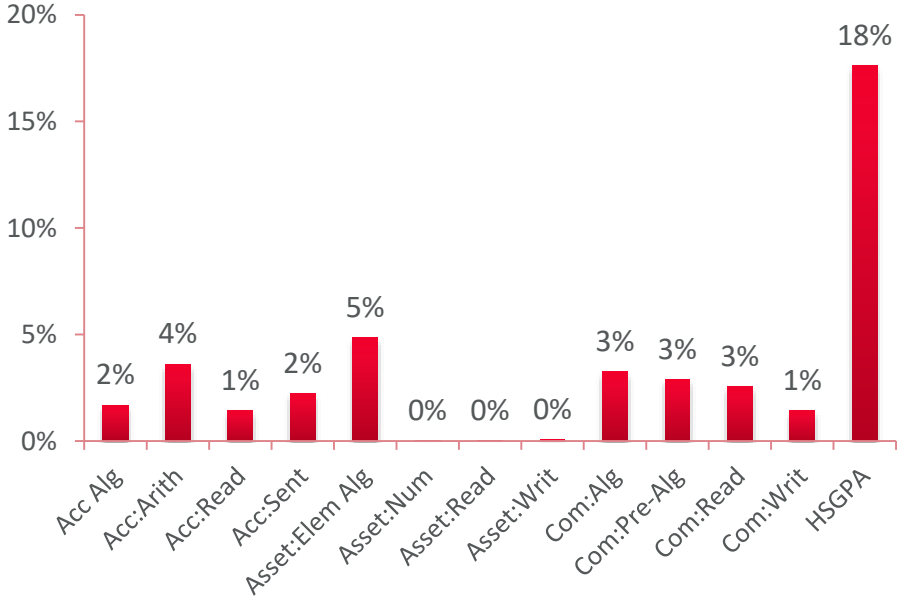
Assessment's "one" job

- Measure student's capacity/predict student's performance to get students into course where they can thrive

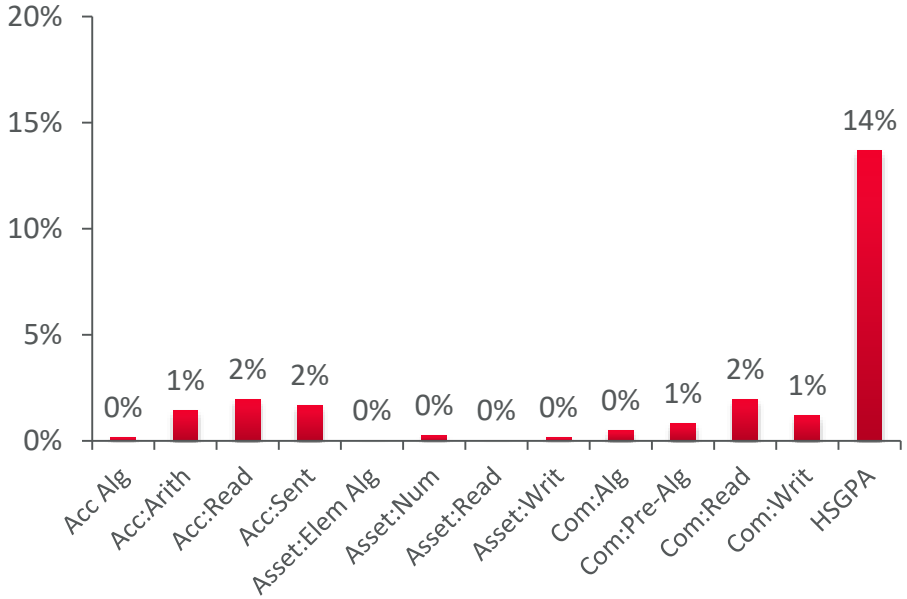
- Single instance, single method assessment systematically and substantially underestimates student capacity
  - particularly for students of color, low income students, first generation college students, women

Variance in college level grades by Accuplacer, Compass, Asset - NC

English



Math



Adapted from Bostian (2016), North Carolina Waves GPA Wand, Students Magically College Ready adapted from research of Belfield & Crosta, 2012 – see also Table 1: http://bit.ly/Belfield2012 (cf also Scott-Clayton, 2012)

Accuplacer, SAT, ACT - Alaska

Figure 6. Among University of Alaska students who enrolled directly in college English courses, high school grade point average explained more of the variation in college English grades than did exam scores, 2008/09–2011/12

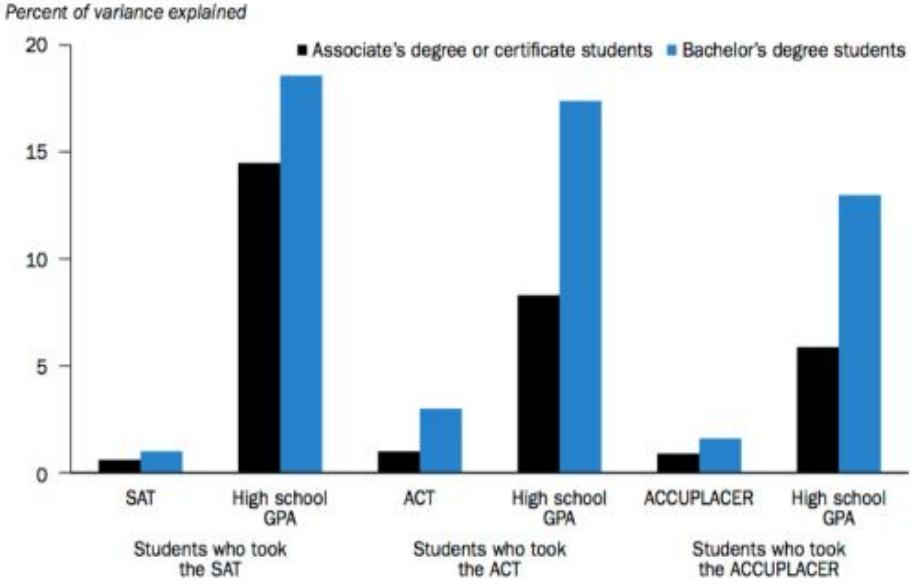
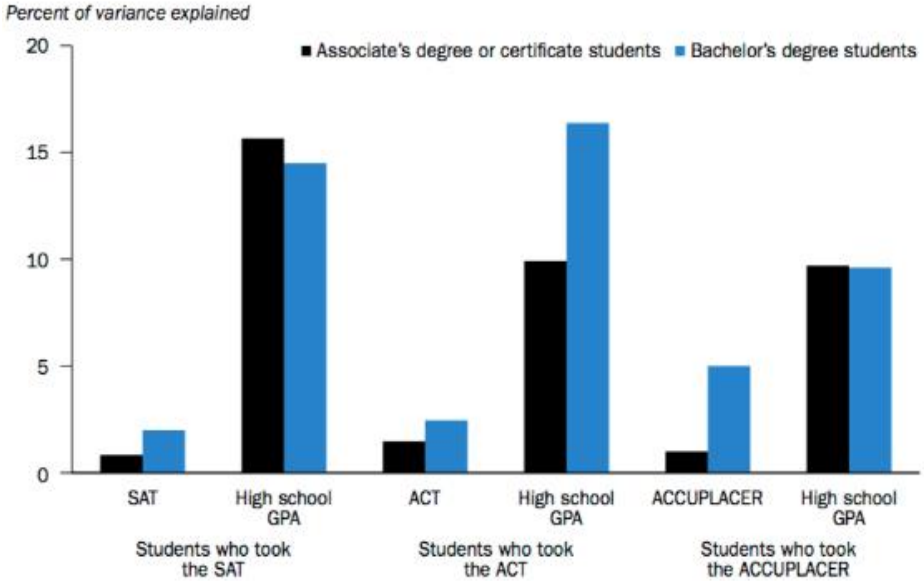


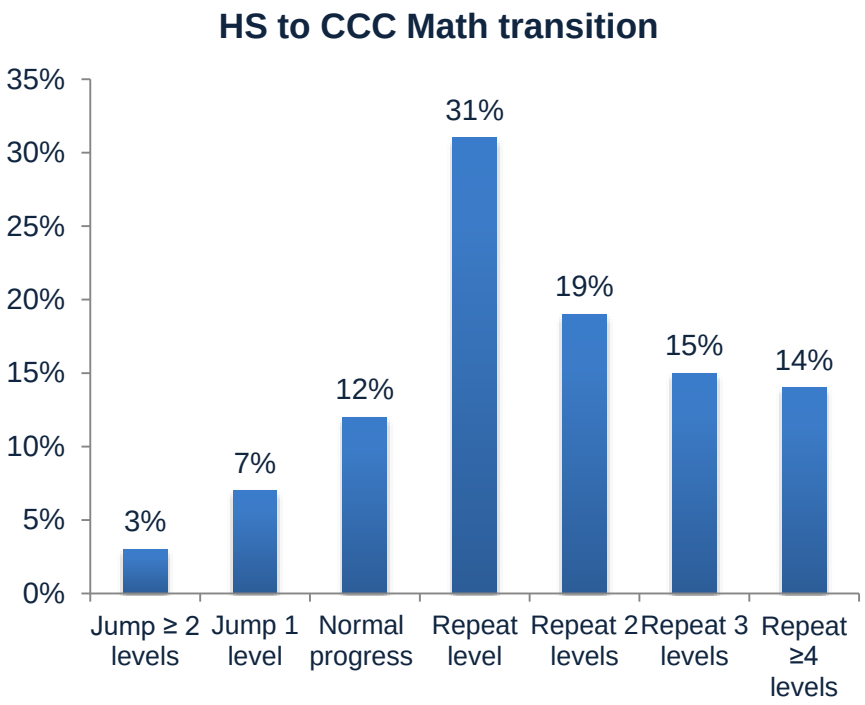
Figure 7. Among University of Alaska students who enrolled directly in college math courses, high school grade point average explained more of the variation in college math grades than did exam scores, 2008/09–2011/12



From Hodara, M., & Cox, M. (2016), **Developmental education and college readiness at the University of Alaska**: http://bit.ly/HSGPAAK

Transitions and intersegmental trust

- **Within systems**
  - **Highly reliable progression with C or better**
- **Between systems**
  - **~40% of CSU students repeat ≥1 course**
    - African Americans/Hispanics ~50% more likely to do so (bit.ly/CSUProficiency)
  - **-85% of CCC students placed into dev ed (bit.ly/BSI2012)**
    - ~3/4 repeat ≥ 1 level, ~1/2 repeat ≥ 2 levels
    - African Americans & Hispanics ~60% more likely to do so, Female students ~20% more
  - **Noyce Foundation report (bit.ly/Noyce2010)**
    - Algebra in 7th grade nearly always advance to Geometry in 8th grade (also 9th to 10th grade)
    - Algebra in 8th grade, ~2/3 repeat including 50% of students with B or better



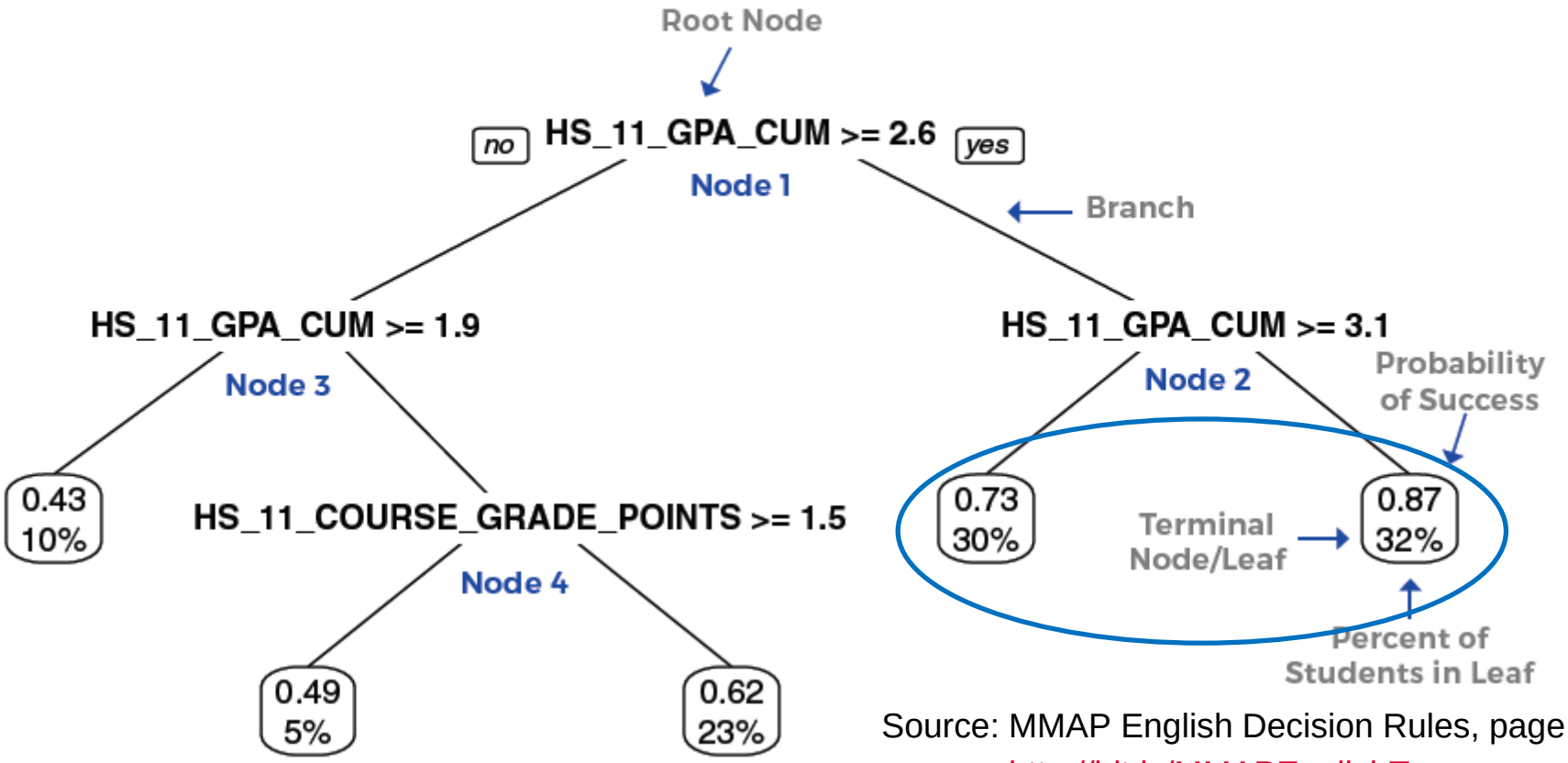
Multiple Measures Assessment Project

- Collaborative effort of CCCCO, Common Assessment Initiative (CAI), RP Group, Cal-PASS Plus (Educational Results Partnership & San Joaquin Delta College), and >90 CCC pilot colleges
- Identify, analyze, & validate multiple measures data (including HS transcript data, non cognitive variable data, & self-report HS transcript data)
  - Focus on predictive validity (success in course) using classification and regression tree models (robust to missing data, non-linear effects, and interactions)
  - Conservative approach: <u>identify students with ≥70% success rate in college level course</u>
- Engage pilot colleges to conduct local replications, test models and pilot use in placement, and provide feedback

bit.ly/MMAP2017

How to Read a Decision Tree for English

Interpreting Transfer Level English - L0 Y DM Decision Tree



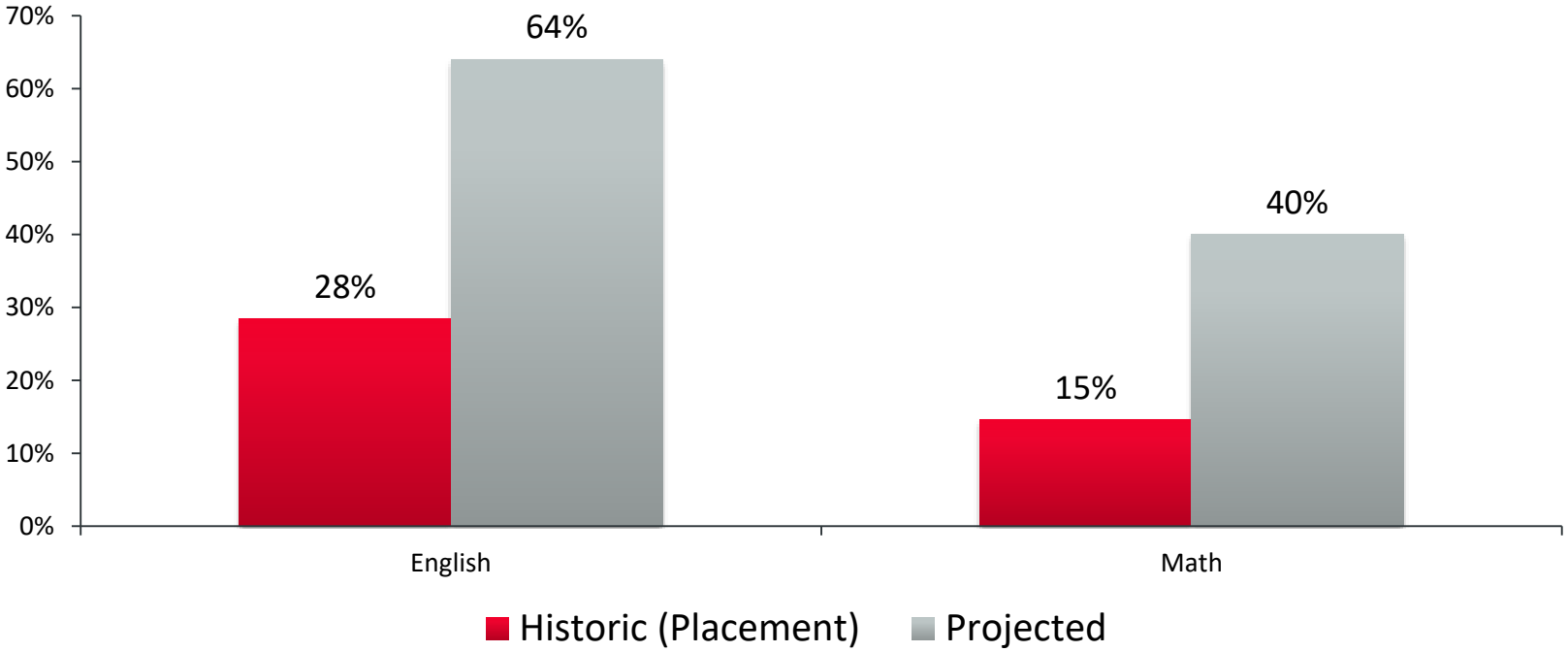
Source: MMAP English Decision Rules, page 8:
http://bit.ly/MMAPEnglishTrees

English & Math Transfer-Level Placement Recommendations

Transfer Level Course	Direct Matriculants	Non-Direct Matriculants
College Algebra Passed Algebra II (or better)	HS 11 GPA >=3.2 OR HS 11 GPA >=2.9 AND Pre-Calculus C (or better)	HS 12 GPA >=3.2 OR HS 12 GPA >=3.0 AND Pre-Calculus or Statistics (C or better)
Statistics Passed Algebra I (or better)	HS 11 GPA >=3.0 OR HS 11 GPA >=2.3 AND Pre-Calculus C (or better)	HS 12 GPA >=3.0 OR HS 12 GPA >=2.6 AND Pre-Calculus (C or better)
English	HS 11 GPA >=2.6	HS 12 GPA >=2.6

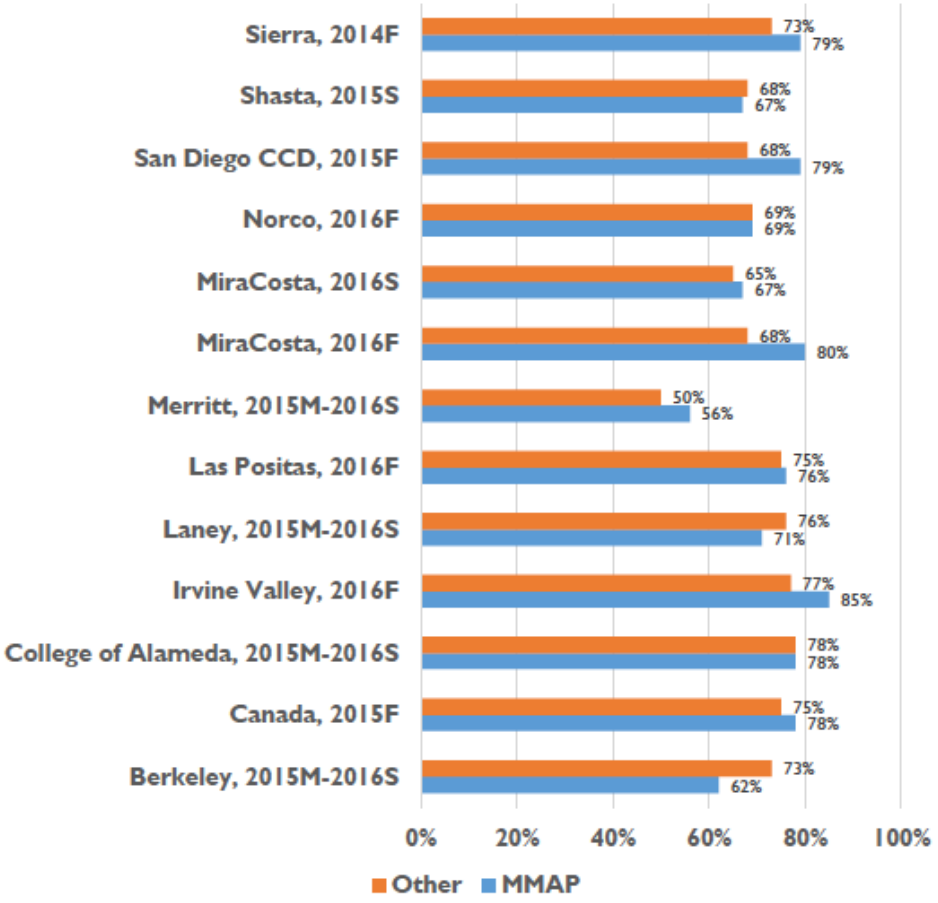
bit.ly/RulesMMAP

Impact on placement into transfer-level

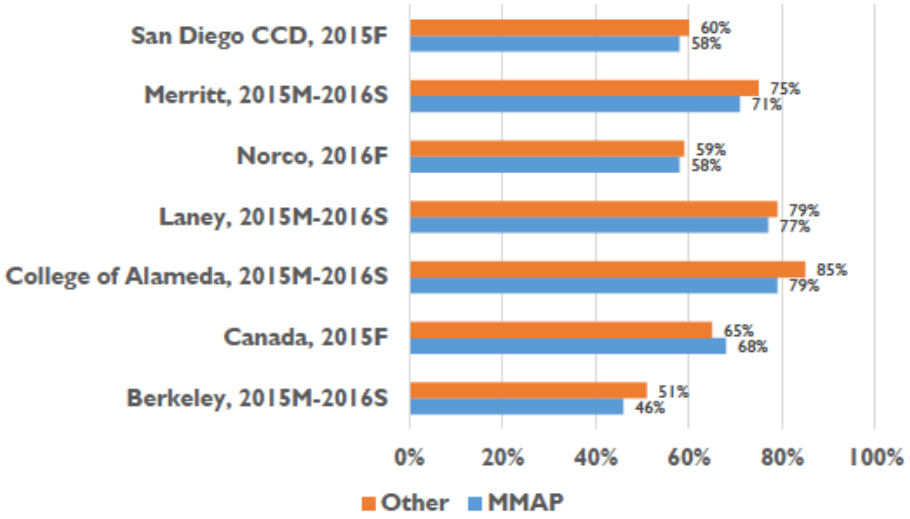


bit.ly/BSI2012 and bit.ly/MMAPProjection

Success Rates in Transfer-level English



Success Rates in Transfer-level Math



bit.ly/MMAPSummary2017

Comparisons Between MMAP & Traditionally Placed Students

Comparison Group	Metric	English Difference	Math difference
Students in transfer-level courses in same term	Success rates (Completion with C or better)	2 percentage points (PP) higher	Equal
Students placed 1 level below (previous cohort)	Completion of transfer-level course in 2 years (2 year throughput)	26 PP higher (72% vs. 46%)	41 PP higher (68% vs 27%)
Students placed 2 levels below (previous cohort)	Completion of transfer-level course in 2 years ((2 year throughput)	40 PP higher (72% vs. 32%)	53 PP higher (68% vs. 15%)

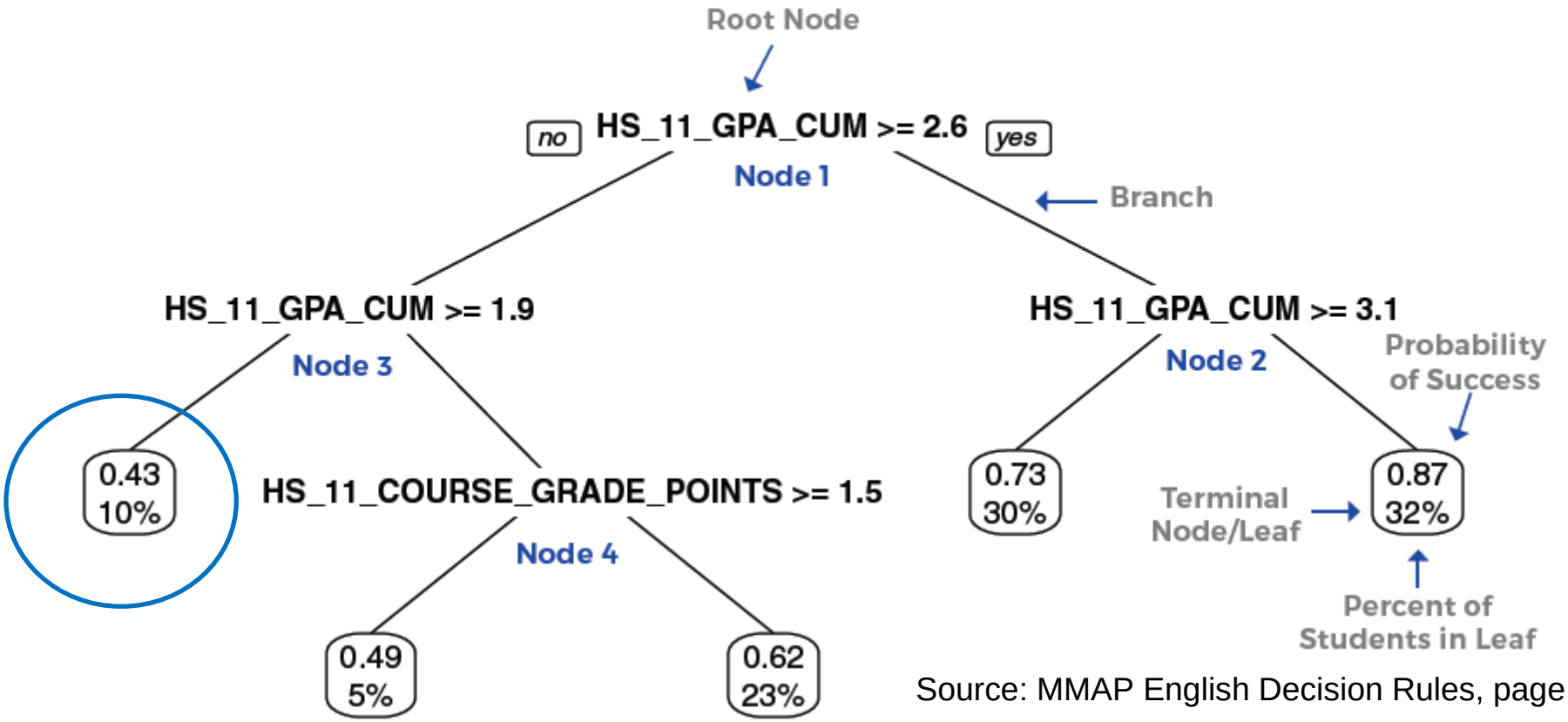
What about everyone else? What maximizes their completion of gateway English and Math?

- Previously identified students highly likely to successfully complete (~70% or higher)

- Can we identify <u>any</u> students more likely to complete gateway English or Math if they start in developmental education?
  - Let’s examine the students least likely to succeed based on their HS performance

How to Read a Decision Tree for English

Interpreting Transfer Level English - L0 Y DM Decision Tree

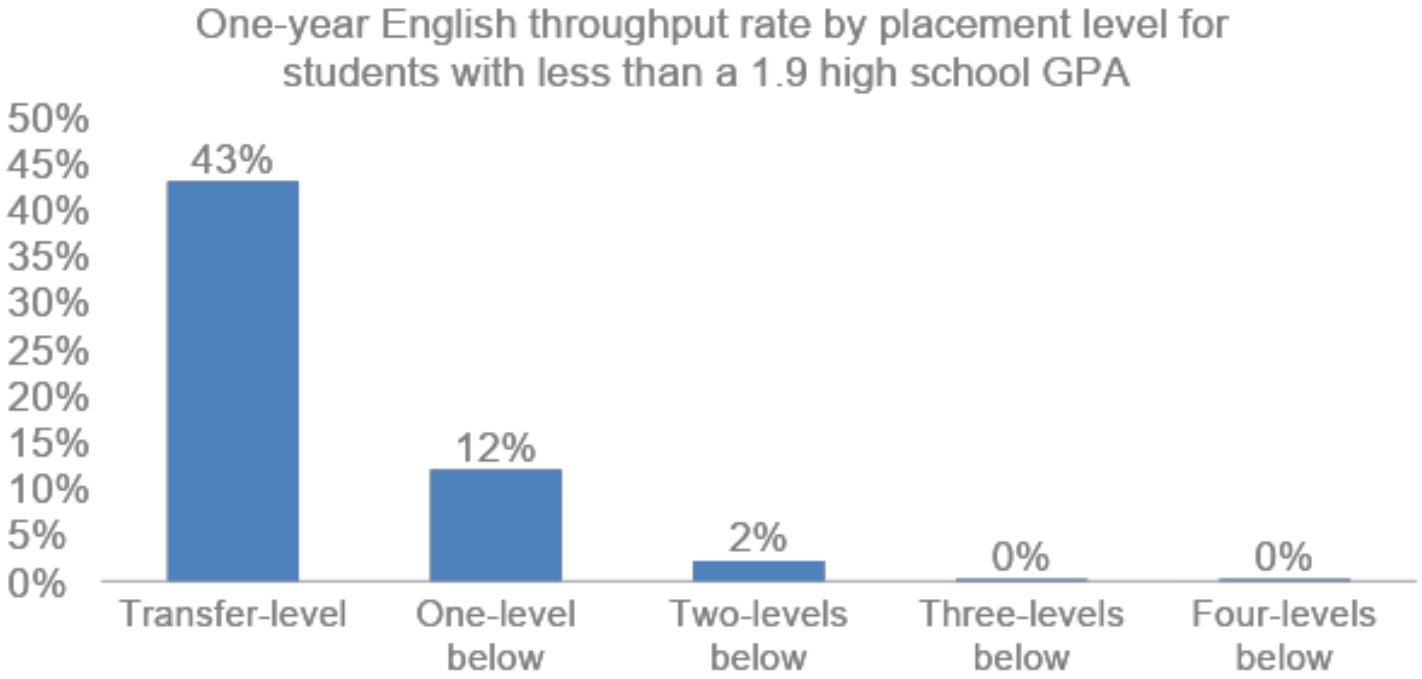


Source: MMAP English Decision Rules, page 8:
http://bit.ly/MMAPEnglishTrees

Maximizing Throughput: English

11th grade GPA < 1.9

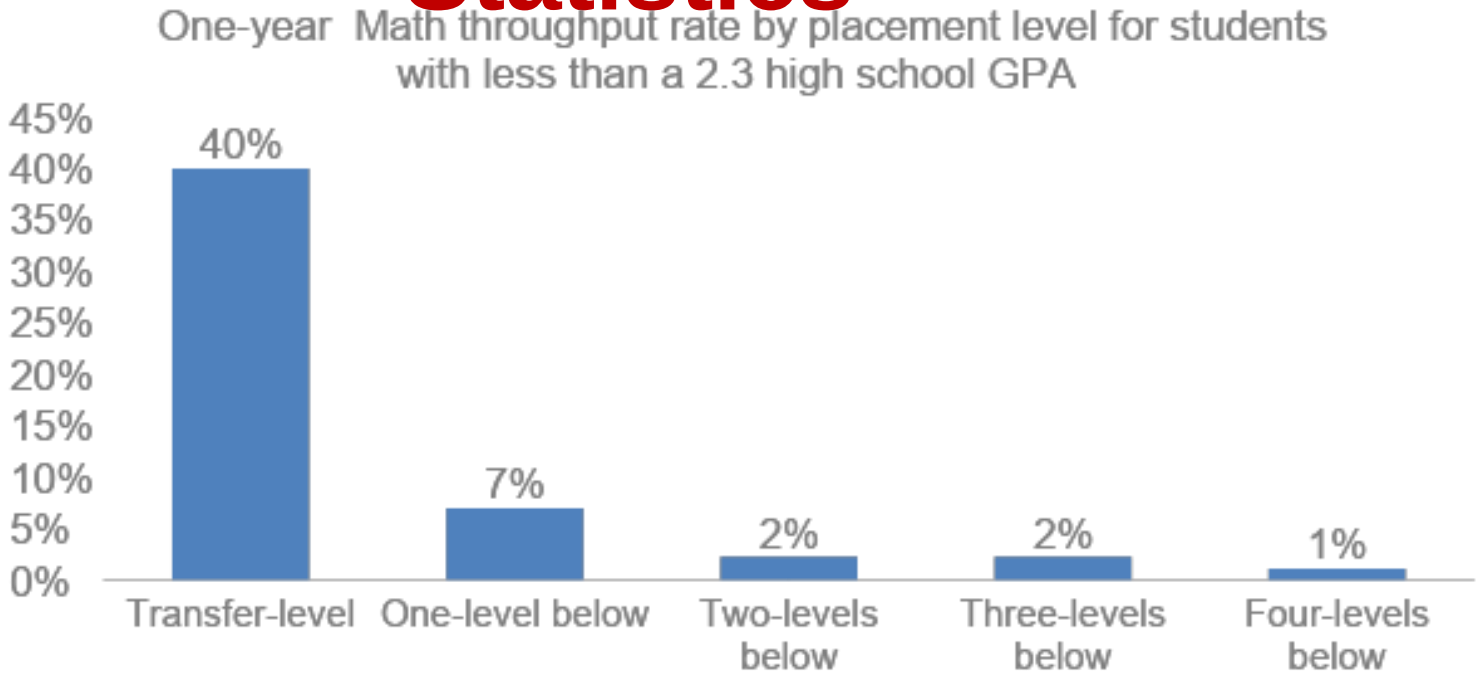
- 43% pass rate
- ~10% of students



Maximizing Throughput: Statistics

11th grade GPA < 2.3

- 40% pass rate
- ~12% of students

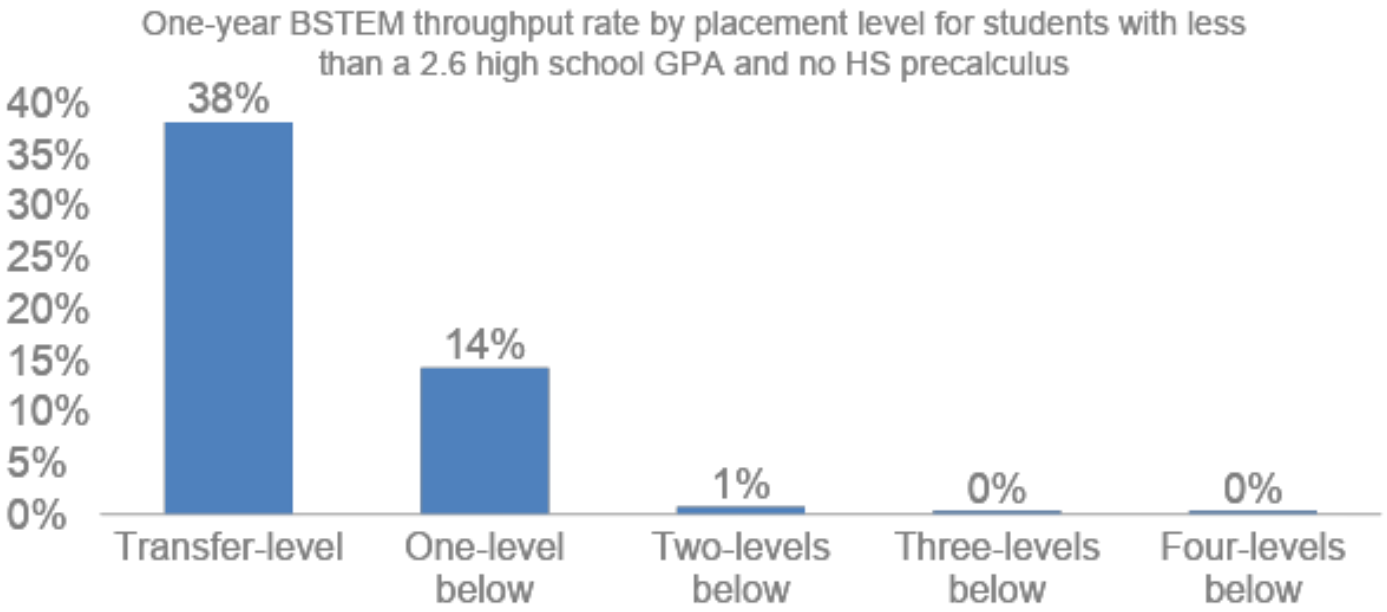


Note – Throughput adjusted upward by removing students with educational goals that don't require transfer—level math and by counting any transfer-level math success

Maximizing Throughput: Pre-Calculus

11th grade GPA < 2.6 and no Precalc. in HS

- 38% pass rate
- ~16% of students



Note – Throughput adjusted upward by removing students with educational goals that don't require transfer, further reducing cohort (denominator) by 75% to approximate proportion of BSTEM oriented students, and by counting any transfer-level math success. Precalculus used as most rigorous, entry level BSTEM course – colleges with earlier entry level BSTEM (e.g., College Algebra or Trigonometry).

Adjusting for Selection Bias

- Differences in HS GPA, test scores, and other factors exist among students at different placement levels
- If low HS GPA students who would have previously been placed into below transfer level are allowed direct access to transfer level course, what are the expected success rates compared to throughput rates from remedial sequences?
- Using success rate predictions from the MMAP decision-tree analyses may not fully account for letting “weaker” students into transfer level
- We examine this issue for college composition, statistics, and precalculus focusing on the lowest node of each decision tree

Adjusting Projected Success Rates

- Difference in GPA and placement test score can be statistically accounted for and the projected success rates of students from lower placement levels can be adjusted (lowered)
- The magnitude of the adjustment depends on:
  - the extent of the differences in test scores and GPA between those in the MMAP models and those who would potentially be entering via the decision rules, and;
  - the strength of the association between the test scores/GPA and success in the target class

Technical Details of Adjustment Process

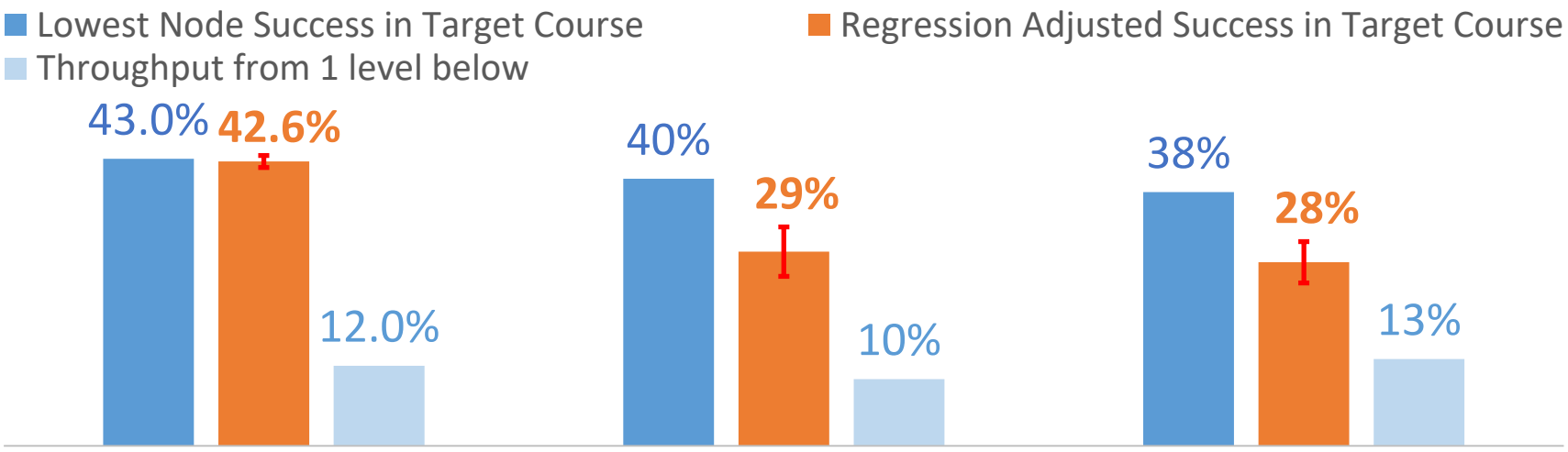
- Use multivariate regression to predict success rate in the target transfer-level using GPA and test scores
- The gaps in predicted success rates among the five placement levels are fitted to observed success rates to preserve proportionality
- Relative gaps are applied to the original PPV and predicted success rates for students from each level are derived
- A weighted average based on the number of students at each level who would be affected is calculated to yield the overall adjusted predicted success rate

Regression Models

- English
  - Success Indicator = HS GPA + ACCUPLACER sentence skills score + ACCUPLACER reading comprehension score
  - Weakest model (R^2=0.011) with sentence skills not significant
- Statistics and Precalculus
  - Success Indicator = HS GPA + ACCUPLACER college algebra score
  - Stronger yet still modest models (R^2=0.10 for statistics; R^2=0.09 for precalculus)
  - Other test scores (arithmetic and elementary algebra) for statistics did not yield useful results so only college algebra was used

Regression Adjusted Success Rates

(error bars represent ±1 se)



College Composition	Statistics	Precalculus
(HS GPA < 1.9)	(HS GPA < 2.3)	(HS GPA < 2.6)
Lowest Node N=7,294	Lowest Node N=1,485	Lowest Node N=1,753
Regression N=1,749	Regression N=809	Regression N=661
1 level below N=13,241	1 level below N=11,309	1 level below N=18,917

Remember – these are the rates for those least likely to succeed. Any observed throughput at colleges needs to similarly take that into account

Future of (California) Placement

- Moderate to high-performing high school students should be placed directly into transfer-level courses.
- Even lowest performing HS students are more likely to complete college-level English & math if placed in college-level work (especially with additional supports).
- Flipped our understanding & responsibility
  - Students don’t have to prove their way in
  - We have to affirmatively demonstrate that this won’t work for them

Eligibility for/Support Recommendations for English

High School Performance	AB 705-Compliant Eligibility/Support Recommendations
HSGPA ≥ 2.6	**Transfer-Level English Composition** No additional academic or corequisite support required
HSGPA 1.9 - 2.6	**Transfer-Level English Composition** Additional academic and corequisite support recommended
HSGPA < 1.9	**Transfer-Level English Composition** Additional academic and corequisite support strongly recommended

For students with high school transcripts within 10 years of enrollment at CC, excluding students who are locally advised to take the ESL test.

Eligibility for/Support Recommendations for Statistics

High School Performance	AB 705-Compliant Eligibility/Support Recommendations
HSGPA ≥ 3.0 Or HSGPA ≥ 2.3 & C or Better in Precalculus	**Transfer-Level Statistics** No additional academic or corequisite support required
HSGPA 2.3–3.0	**Transfer-Level Statistics** Additional academic and corequisite support recommended
HSGPA < 2.3	**Transfer-Level Statistics** Additional academic and corequisite support strongly recommended

For students with high school transcripts within 10 years of enrollment at CC.

Eligibility for/Support Recommendations for Gateway STEM Math

High School Performance	AB 705-Compliant Eligibility/Support Recommendations
HSGPA ≥ 3.4 OR HSGPA ≥ 2.6 AND enrolled in HS Calculus	**Transfer-Level Gateway STEM Math** No additional academic or corequisite support required
HSGPA ≥2.6 or Enrolled in HS Precalculus	**Transfer-Level Gateway STEM Math** Additional academic and corequisite support recommended
HSGPA ≤ 2.6 and no Precalculus	**Transfer-Level Gateway STEM Math** Additional academic and corequisite support strongly recommended

For students with high school transcripts within 10 years of enrollment at CC and who had taken Algebra 2/Intermediate Algebra/Integrative Math 3 or higher in high school.

Summary

- **We have been working from inaccurate presumption of student inadequacy rather than following the evidence**
  - Using ineffective tools to mismeasure, misplace, and misdirect students
- **Evidence and best practices strongly suggests:**
  - systematic and substantial underestimation of our students' capacity
  - dramatic potential to improve student outcomes
  - successful students should progress normally and very rarely be placed backwards as they move between segments (**just as within each segment)**
  - **direct placement with corequisite support** is likely to be the most effective strategy for everyone else

Questions?

Contact Information

- John Hetts
- Educational Results Partnership
- jhetts@edresults.org
- 714-380-2678 cell
- Twitter: @jjhetts #LetIcarusFly
- bit.ly/MMAP2017
- bit.ly/AACCMM

The Fierce Urgency of Now

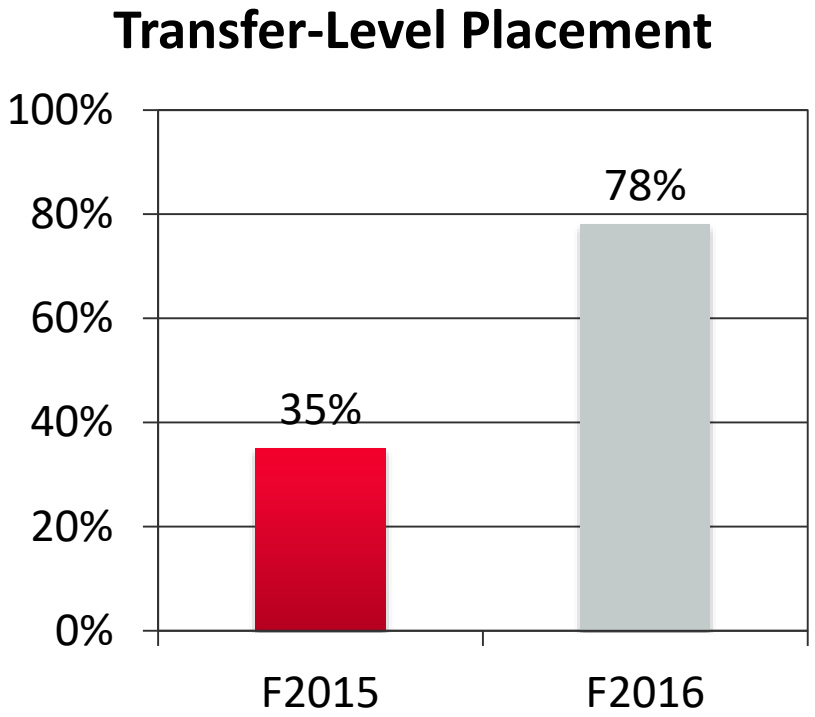
- "We are now faced with the fact that tomorrow is today. We are confronted with the fierce urgency of now. In this unfolding conundrum of life and history, there "is" such a thing as being too late. This is no time for apathy or complacency. This is a time for vigorous and positive action."
  - Dr. Martin Luther King, Jr.

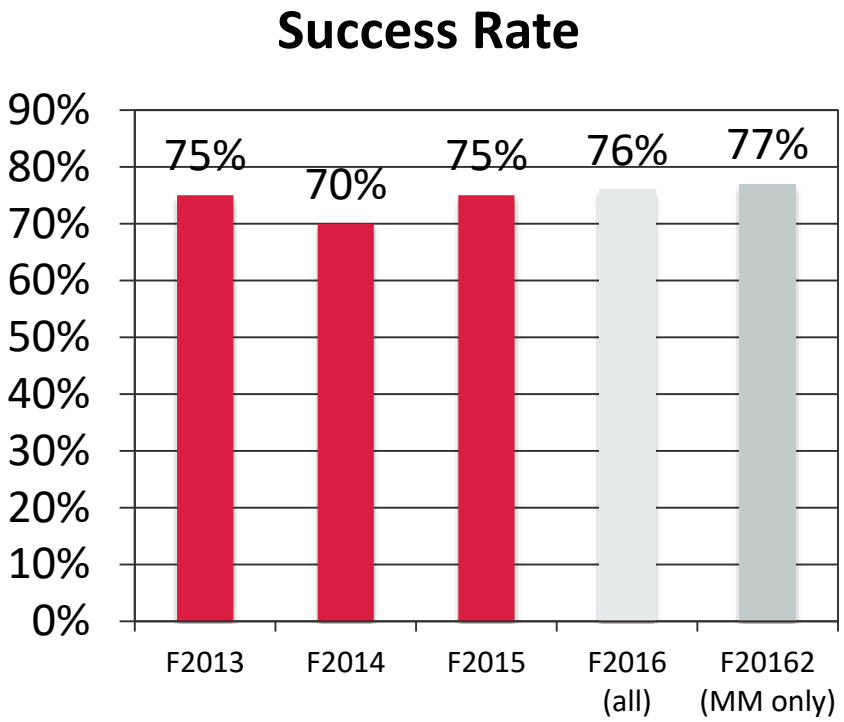
Wait – I have more questions!
Resources for Addressing Concerns/Multiple Measures Myths

- Students placed via multiple measures will not be successful
- High school grades only predictive for recent graduates
- High school grades validity threatened by grade inflation/social promotion
- High school transcripts are too hard to get or use transcripts

Students placed by multiple measures are just as and often more successfulin college level courses as traditionally placed students

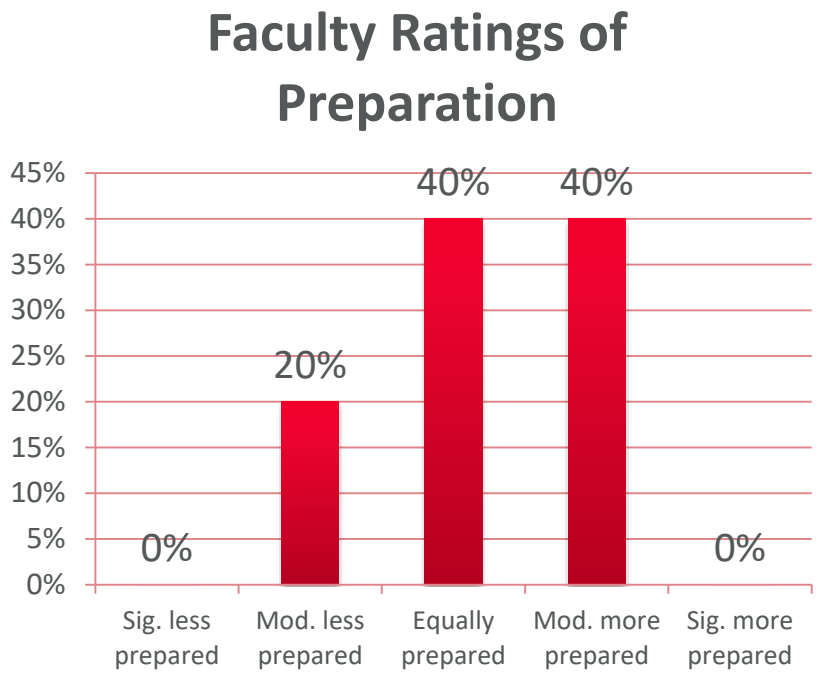
Las Positas F2016 results: English

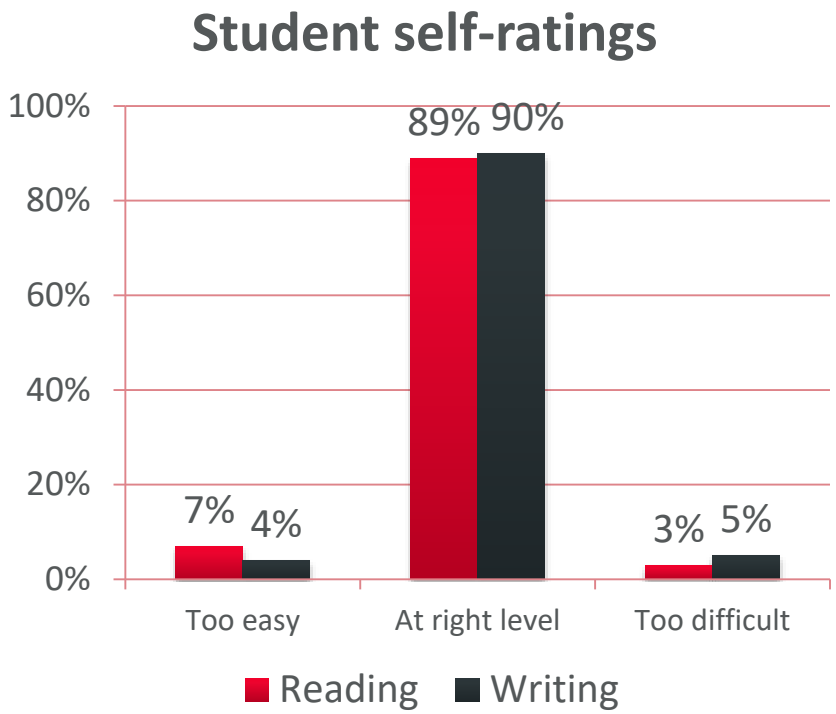




*Used student self-reported HSPGA ≥2.5 within 10 years of high school, doubled placement into transfer level English, success rates improved slightly.

Were they prepared?

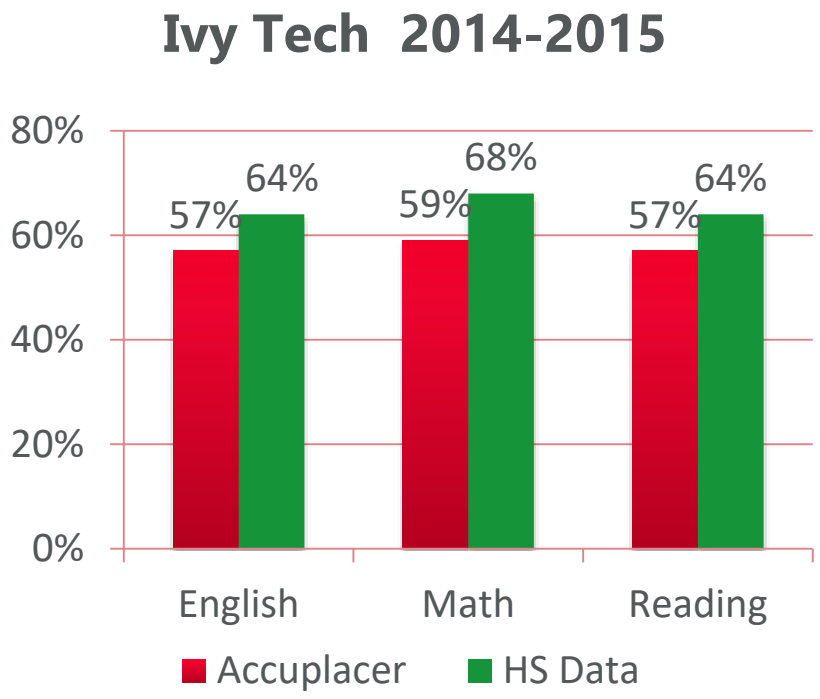




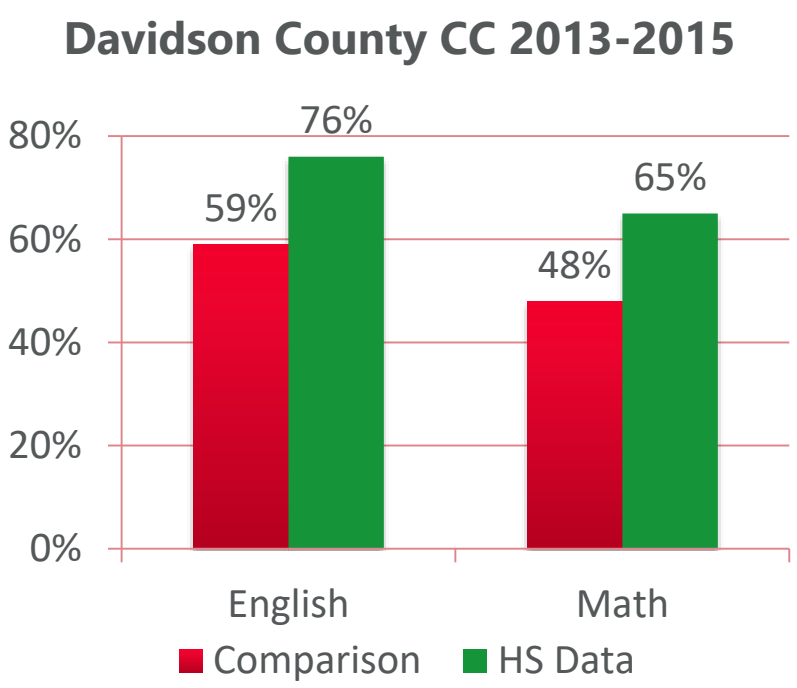
Faculty were twice as likely to rate students (massive numbers of whom would have previously been denied access to transfer level English) as more prepared than as less prepared

Similar outcomes for transfer-level course completion in other national examples at scale:

http://bit.ly/CCCSEMM



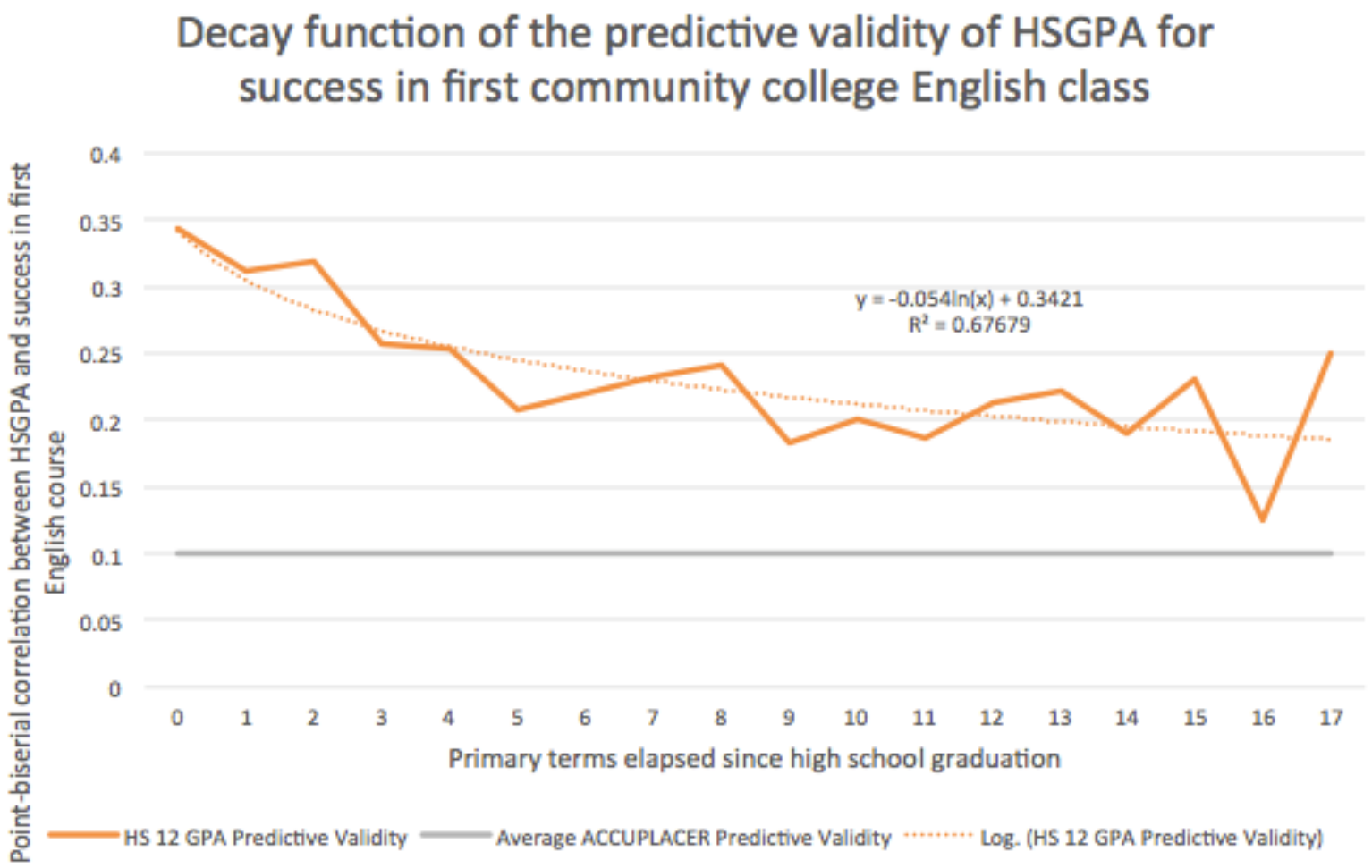
Rules used for English and Math: HSGPA >=2.6



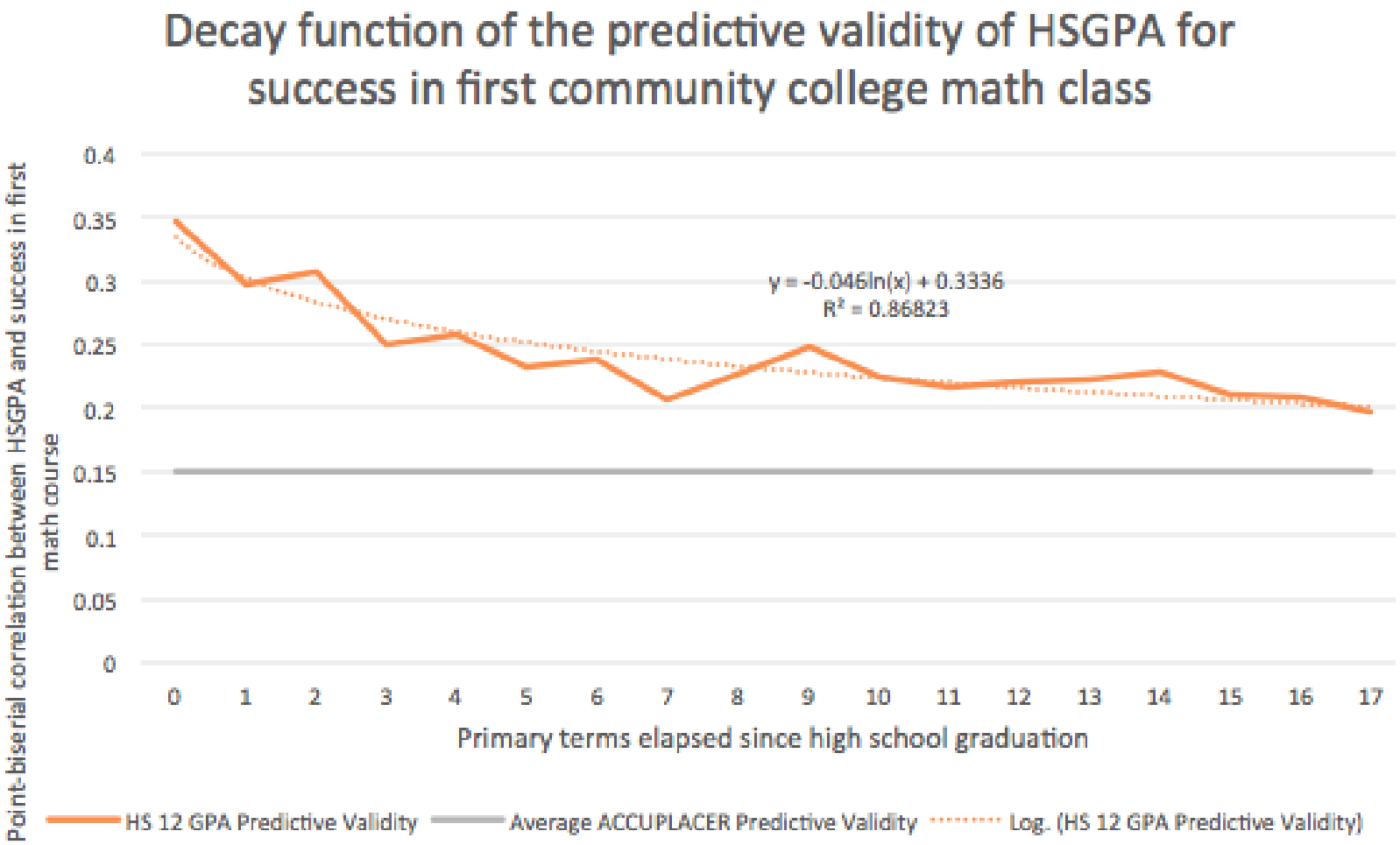
Rules used for English and Math: HSGPA >=2.6 and college directed (completion of four years of mathematics including one year beyond Algebra 2)

High School GPA is as or more predictive than tests for far longer than people think

Still more predictive than assessment tests at 9-10 years



Hayward et al (in preparation). Decay Function of the Predictive Validity of High School GPA



Hayward et al (in preparation). Decay Function of the Predictive Validity of High School GPA

Concerns about grade inflation and social promotion do not fit evidence

- Concern posits that there should be little to no predictive utility of HS grades for college performance because HS grades unrelated to actual performance/capacity
  - If everyone gets As and Bs, that would mean no variation to predict outcomes
- Yet, predictive utility strongly observed
  - Stronger than standardized tests
  - <u>Even by standardized test companies</u>

It doesn’t have to be hard or expensive

Free resources to get started

- Multiple Measures Assessment Project (free)
  - **Main website: bit.ly/MMAP2017**
  - **Pilot college resources: bit.ly/ResourcesMMAP**
    - Webinars: bit.ly/WebinarsMMAP
      - bit.ly/ImplementMMAP
    - Provision of statewide model placement recommendations bit.ly/MMAPRecs
    - Placement matrix for local data or transcript-based implementation: http://bit.ly/MMAPPlacementMatrix
    - Summary paper: bit.ly/Bahr2017
    - Additional supplemental tools, resources (NCVs, questionnaires, exercises)
  - Some additional support available for colleges/systems interested insetting up regional/systemwide data sharing and/or conducting a randomized controlled trial (jhetts@edresults.org)

Up to 11th grade transcript available (formerly Direct Matriculant)

Highest math course taken in high school[2] \ Total non-weighted GPA[1]	GPA ≥ 3.6	GPA ≥ 3.4	GPA ≥ 3.3	GPA ≥ 3.2	GPA ≥ 3.0	GPA ≥ 2.9	GPA ≥ 2.8	GPA ≥ 2.6	GPA ≥ 2.4	GPA ≥ 2.3	GPA ≥ 2.0	GPA < 2.0
Calculus 1 (C or better)[3]	Calc	Calc	Calc	Calc	Pre-Calc	Pre-Calc	Pre-Calc	Pre-Calc	Stats	Stats	Pre-Alg	Arith
Calculus 1 (enrolled)[4]	Calc	Calc	Calc	Calc	Pre-Calc	Pre-Calc	Pre-Calc	Pre-Calc	Stats	Stats	Pre-Alg	Arith
Pre-Calculus (C+ or better)	Calc	Calc	Calc	Calc	Trig	Col Alg	Stats	Stats	Stats	Stats	Pre-Alg	Arith
Pre-Calculus (C or better)	Calc	Calc	Calc	Calc	Trig	Col Alg	Stats	Stats	Stats	Stats	Pre-Alg	Arith
Trigonometry (C or better)	Calc	Pre-Calc	Trig	Trig	Trig	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Pre-Alg	Arith
Algebra 2 (B or better)	Pre-Calc	Pre-Calc	Trig	Trig	Trig	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Pre-Alg	Arith
Algebra 2 (C or better)	Pre-Calc	Pre-Calc	Col Alg	Col Alg	Stats	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Pre-Alg	Arith
Algebra 1 (C or better)	GE Math	GE Math	GE Math	Stats	Stats	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Pre-Alg	Arith
All other	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Pre-Alg	Pre-Alg	Arith

Legend

Calc	Calculus 1
Pre-Calc	Pre-Calculus
Trig	Trigonometry, College Algebra, GE Math, Statistics
Col Alg	College Algebra, GE Math, Statistics
GE Math	GE Math, Statistics
Stats	Statistics
Alg 2	Intermediate Algebra
Alg 1	Elementary Algebra
Pre-Alg	Pre-Algebra
Arith	Arithmetic

[1] Refers to the total non-weighted GPA. Do not include weighted, academic, term-based, or yearly GPA.
[2] Highest math course taken in high school by increasing difficulty.
[3] Grade received in course.
[4] Student enrolled in Calculus 1 (no grade requirement).

Up to 12th grade transcript available (formerly Non-Direct Matriculant)

Total non-weighted GPA[1]
CST scores[2]

Last Math course taken in high school[3]

	GPA ≥ 3.5	GPA ≥ 3.3	GPA ≥ 3.2	GPA ≥ 3.1	GPA ≥ 3.0 and Algebra 2 CST ≥ 340	GPA ≥ 3.0	GPA ≥ 2.9	GPA ≥ 2.8	GPA ≥ 2.6	GPA ≥ 2.5 and Algebra 2 CST ≥ 302	GPA ≥ 2.5	GPA ≥ 2.3	GPA ≥ 2.1 and Algebra 1 CST ≥ 302	GPA ≥ 2.1	GPA < 2.1
Calculus 1 (C or better)[4]	Calc	Calc	Calc	Calc	Pre-Calc	Pre-Calc	Trig	Trig	Stats	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Arith
Calculus 1 (enrolled)[5]	Calc	Calc	Calc	Calc	Pre-Calc	Trig	Trig	Trig	Stats	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Arith
Pre-Calculus (C or better)	Calc	Pre-Calc	Trig	Trig	Pre-Calc	Trig	Trig	Trig	Stats	Alg 2	Alg 2	Alg 1	Alg 1	Pre-Alg	Arith
Trigonometry (C or better)	Calc	Pre-Calc	Col Alg	Col Alg	Pre-Calc	Col Alg	GE Math	Alg 1	Alg 1	Alg 2	Alg 1	Alg 1	Alg 1	Pre-Alg	Arith
Statistics (C or better)	Pre-Calc	Pre-Calc	Col Alg	Col Alg	Pre-Calc	Col Alg	GE Math	Alg 1	Alg 1	Alg 2	Alg 1	Alg 1	Alg 1	Pre-Alg	Arith
Algebra 2 (C or better)	Pre-Calc	Pre-Calc	Col Alg	Stats	Pre-Calc	Stats	Alg 2	Alg 1	Alg 1	Alg 2	Alg 1	Alg 1	Alg 1	Pre-Alg	Arith
Algebra 1 (C or better)	GE Math	GE Math	GE Math	Stats	Stats	Stats	Alg 2	Alg 1	Alg 1	Alg 2	Alg 1	Pre-Alg	Alg 1	Pre-Alg	Arith
All other	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Alg 1	Pre-Alg	Pre-Alg	Pre-Alg	Arith

[1] Refers to the total non-weighted GPA. Do not include weighted, academic, term-based, or yearly GPA.
[2] California Standardized Test (CST) score in Math. Current MMAP rules do not include Smarter Balanced test scores.
[3] Highest math course taken in high school by increasing difficulty.
[4] Grade received in course.
[5] Student enrolled in Calculus 1 (no grade requirement).

Legend

Calc	Calculus 1
Pre-Calc	Pre-Calculus
Trig	Trigonometry, College Algebra, GE Math, and Statistics
Col Alg	College Algebra, GE Math, and Statistics
GE Math	GE Math and Statistics
Stats	Statistics
Alg 2	Intermediate Algebra
Alg 1	Elementary Algebra
Pre-Alg	Pre-Algebra
Arith	Arithmetic

Up to 11th grade transcript available

(Formerly Direct Matriculant)

Last English course taken in high school[2] \ Total non-weighted GPA[1]	GPA ≥ 2.6	GPA ≥ 2.3	GPA ≥ 2.0	GPA ≥ 1.4	GPA < 1.4
No requirement[3]	**Transfer**	One-below	Two-below	Three-below	Four-below

[1] Refers to the total non-weighted GPA. Do not include weighted, academic, term-based, or yearly GPA.
[2] Last English course taken in high school.
[3] No English course-taking requirement.

Legend

Transfer	Transfer level English
One-below	One level below transfer
Two-below	Two levels below transfer
Three-below	Three levels below transfer
Four-below	Four levels below transfer

Up to 12th grade transcript available

(Formerly Non-Direct Matriculant)

Last English course taken in high school[3] \ Total non-weighted GPA[1] CST scores[2]	GPA ≥ 2.6	GPA ≥ 2.2	GPA ≥ 1.8 *and* CST ≥ 288	GPA ≥ 1.8	GPA ≥ 1.7	GPA ≥ 1.5 *and* CST ≥ 268	GPA < 1.7
12th grade English (C or better)[4]	**Transfer**	One-below	Two-below	Two-below	Three-below	Three-below	Four-below
12th grade English (D or better)	**Transfer**	Two-below	Two-below	Two-below	Three-below	Three-below	Four-below
All other	**Transfer**	Three-below	Three-below	Three-below	Three-below	Three-below	Four-below

[1] Refers to the total non-weighted GPA. Do not include weighted, academic, term-based, or yearly GPA.
[2] California Standardized Test (CST) score in English. Current MMAP rules do not include Smarter Balanced test scores.
[3] Last English course taken in high school.
[4] Grade received in course.

Self-reported HSGPA as potential alternative

- Ease of immediate implementation at very low to no cost (possibly savings)
- UC, CSU, & others uses self-report in admissions, verifying after admission
  - 2008: 9 campuses, 60000+ students. No campus had >5 discrepancies b/w reported grades and transcripts: bit.ly/UCSelfReportGPA
- College Board: Shawn & Matten, 2009: "Students are quite accurate in reporting their HSGPA", r(40,299) = .73: bit.ly/CBSRGPA
- ACT brief found SR HSGPA to be highly correlated with students actual GPA: ACT, 2013: *r*(1978) = .84 bit.ly/ACTSRGPA

GPA vs. Self-reported HSGPA

HSGPA Level	N	Mean HSGPA		Mean diff.
		Actual	Self-reported	
3.50–4.00	599	3.79	3.75	–.04
3.00–3.49	451	3.24	3.23	–.01
2.50–2.99	408	2.81	2.76	–.05
2.00–2.49	265	2.24	2.35	.11
1.50–1.99	172	1.77	2.04	.27
0.00–1.49	85	1.03	1.85	.82
Total	1,980	2.95	3.02	.07

- ACT, 2013: http://bit.ly/ACTSRGPA

GPA vs. Self-reported HSGPA

School-Reported HSGPA	Self-Reported HSGPA: A (n = 13,658)	A– (n = 10,214)	B+ (n = 8,066)	B (n = 5,671)	B– (n = 1,704)	C+ (n = 675)	C (n = 261)	C– (n = 48)
A (n = 14,825)	**78%**	32%	8%	3%	1%	2%	3%	2%
A– (n = 10,547)	17%	**45%**	34%	14%	4%	2%	3%	4%
B+ (n = 7,795)	4%	17%	**39%**	35%	16%	7%	4%	8%
B (n = 4,796)	1%	4%	17%	**35%**	40%	29%	18%	17%
B– (n = 1,649)	0%	1%	2%	10%	**28%**	36%	32%	15%
C+ (n = 550)	0%	0%	1%	2%	9%	**19%**	28%	29%

- College Board, 2009: http://bit.ly/CBSRGPA

Under-reporting was 2-4X as common as over-reporting.

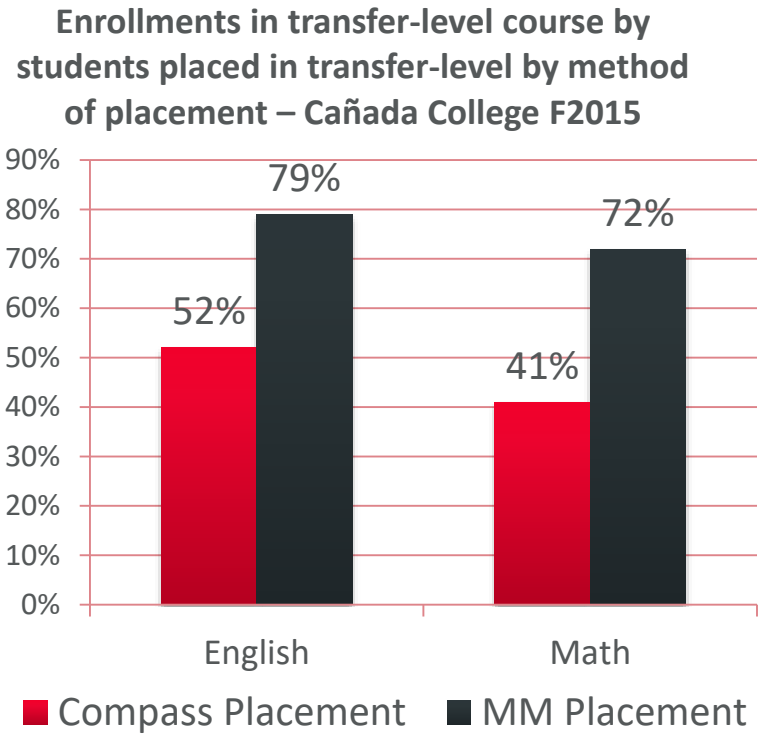
Considering alternative math pathways: is intermediate algebra critical for success in statistics?

- Based on statewide data on actual performance in Statistics in the CCC's, ASCCC allowed implementation of MMAP rules at local discretion of the college for using algebra as prereq
  - Student who met MMAP rules with less math in high school were more successful than students with more math in high school who didn't meet MMAP rules
- http://bit.ly/ASCCCPrereq

Highest Math successfully completed in HS	Any	Higher than Algebra 2	Algebra 2	Algebra 1	Neither prereq met
All students	69%	79%	63%	49%	49%
MMAP statistics placement (or higher) rules met	77%	80%	72%	60%	74%
MMAP statistics placement rules not met	48%	47%	50%	44%	41%

Potential additional benefits of multiple measures

- Jump start low cost early alert systems (HSGPA strong predictor)
- Better evidence basis to evaluate interventions (e.g., tutoring, supplemental instruction)
- Re-energize even strong K-12 relationships
- Mitigate biggest loss point in foundational skills sequence: failure to enroll in first course in sequence
  - Multiple measures-placed students often more likely to enroll



Putting it all together: Multiple Measures and Corequisite Support

Mathematics at Cuyamaca College

- Disjunctive placement (higher of test-based placement or multiple measures based placement – adapted from Phase 1 MMAP recommendations
  - Algebra I with C or better plus HSGPA ≥ 2.8: Statistics with corequisite support
  - Algebra II with C or better and HSGPA ≥ 2.8: College algebra or higher w/corequisite support
  - Other MMAP placement recommendations for higher placement without support

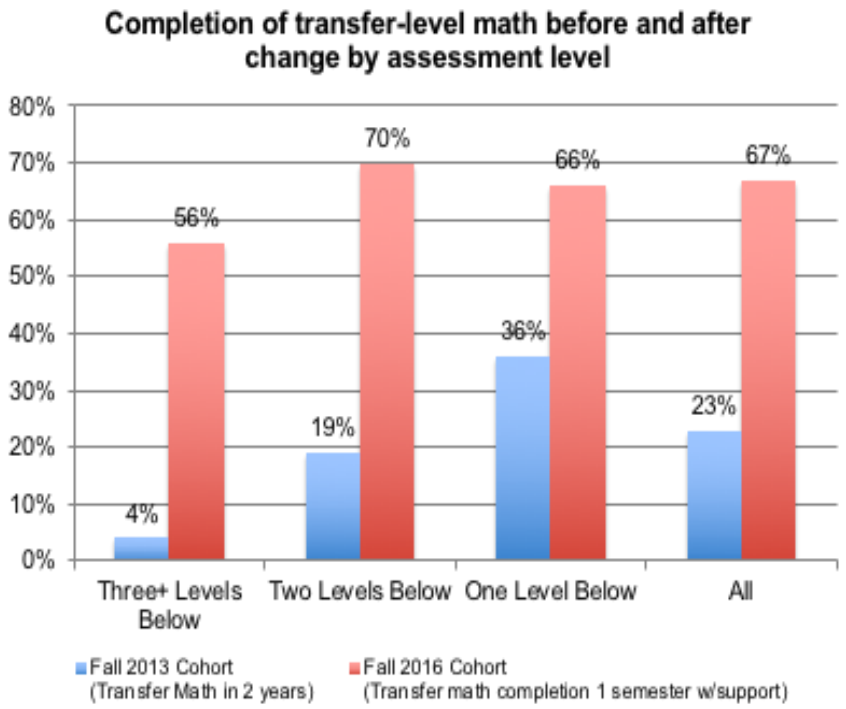
English at Skyline College

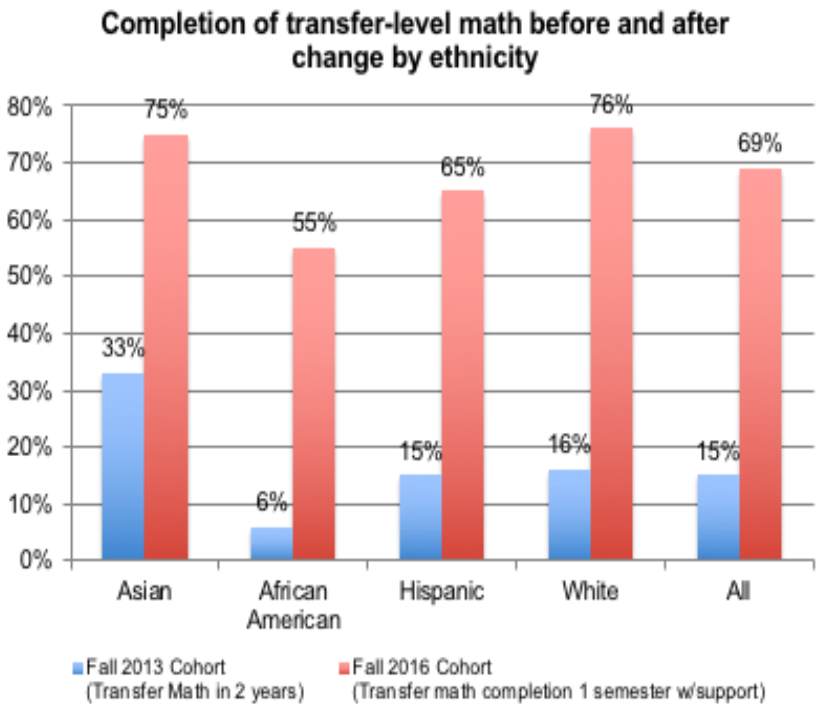
- Phased transition over three years
  - Accelerated developmental education at one level below
  - Then MMAP implementation of English placement recommendations and corequisite developmental education courses

Adapted from MMAP Webinar: *Implementing and Improving Your MMAP Process - Examples from Pilot Colleges, available at http://bit.ly/WebinarsMMAP*

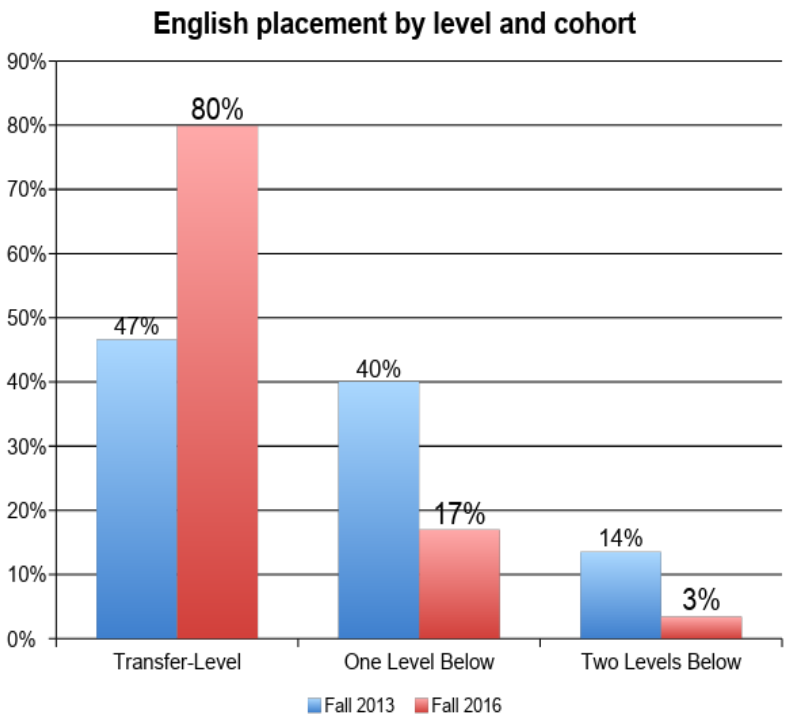
For more, please see recent publications by the California Acceleration Project: *Leading the Way:* http://bit.ly/CAPCuyamaca and *Up to the Challenge*: http://bit.ly/CAPChallenge

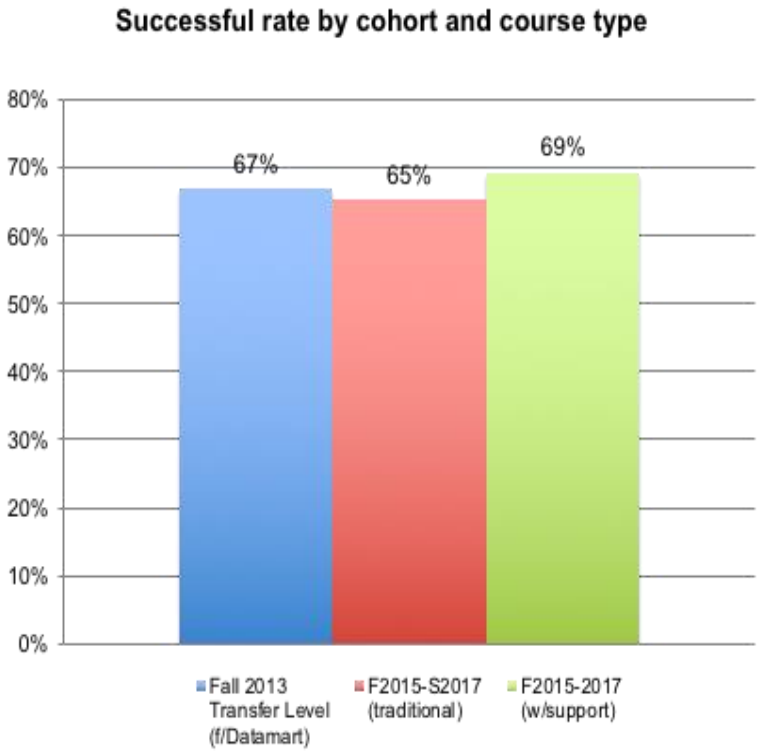
Gateway Momentum in Math at Cuyamaca





Gateway Momentum in English at Skyline





How can we give students the best chance of completing transfer-level English within a year?

San Diego Mesa College

Starting Placement	One-Year Completion of College English Fall 16-Spr 17
Transfer-Level English with Corequisite (N=300) 3-unit course linked to 2-unit corequisite for students with who traditionally have begun 1-2 levels below HS GPA below 2.6 (one semester success rate)	**74%**
One level below transfer (N= 1180)	**39%**
Two levels below transfer (N=67)	**13%**

If allowed to enroll directly in stand-alone transfer-level classes, statewide students:

- **with a HS GPA below 1.9 have a 43% average success rate**
- **with a HS GPA from 1.9 to 2.6 have a 59% average success rate**

From Serpas, S (May 4, 2018): Responding to AB 705 and Supporting Students in English/Reading: Concurrent Support Courses for College Composition. Presentation to AB705 Workshop, Bakersfield College.

Other resources for combination

- **Webinar: Implementing and Improving Your MMAP Process - Examples from Pilot Colleges: bit.ly/WebinarsMMAP (Cuyamaca College & Skyline College**
  - **Recent publications by the California Acceleration Project: accelerationproject.org**
    - Leading the Way: bit.ly/CAPCuyamaca and Up to the Challenge: bit.ly/CAPChallenge

- **CSU adoption of full scale combination of multiple measures and corequisite support for Fall 2018 (EO 1110)**
  - **Weighted self-reported GPA of 3.0 + appropriate senior year course (80% SR standard)**
  - **bit.ly/CSUMultipleMeasures**

- **CCC adoption of full scale combination of multiple measures and corequisite support coming very soon – AB705: (bit.ly/AB705MM and assessment.cccco.edu)**
  - **Maximize probability of completion of college-level coursework in 1 year**
  - **No developmental education without evidence it improves outcomes**