The Strategic Data Project (SDP), housed at the Center for Education Policy Research at Harvard University, partners with school districts, school networks, and state agencies to bring high-quality research methods and data analysis to bear on management and policy decisions.

SDP’s theory of action is that if we are able to bring together the right people, the right data, and the right analysis, educational leaders can significantly improve decisions, thereby increasing student achievement.

SDP fulfills this theory of action with three primary strategies:
1. conducting rigorous “diagnostic” analysis on teacher effectiveness and college-going success using agency data,
2. placing and supporting data strategists in partner agencies, and
3. distributing our analytic results and learnings to support broad adoption of methods and data use practices throughout the education sector.

SDP was launched in June 2009 and currently partners with over 35 states, school districts, networks of charter schools, and nonprofit organizations. The project is supported by the Bill & Melinda Gates Foundation.
A few generations ago, a high school diploma opened doors to skilled jobs and middle-class earnings. Today, higher education is just as essential. Whether in the form of a two- or four-year college or a technical program, some form of postsecondary training has become a critical step to achieving stable employment and financial security.\(^1\) In the face of these economic changes, it is increasingly important that K–12 educators prepare students with the knowledge and skills to enroll in, persist at, and complete higher education.

Recognizing this, in May 2012 the Board of Education for the Los Angeles Unified School District (LAUSD) approved a proposal to ensure that all LAUSD graduates were college ready. The proposal followed a motion made in 2005 by the board that made a college preparatory curriculum, known in California as the A-G course sequence, the default curriculum for all of the district’s high schools. A-G requirements fulfill the course prerequisites for admission into the California State University (CSU) and University of California (UC) systems.\(^2\)

To ensure LAUSD students are prepared for college, the board adopted the A-G course sequence as a requirement for graduation. The graduating class of 2016 will be the first cohort to fall under these new graduation requirements. Students must pass A-G courses with a D or better to graduate. Beginning with the class of 2017, students will be required to pass courses with a C or better, the prerequisite for admission to a CSU or UC school.

In order to assess the distance LAUSD has to cover to fulfill the board’s goals, we at the Strategic Data Project (SDP) executed these analyses. They focus on three major areas: 1) how students across the district progress toward high school graduation, 2) whether and how students who fall off track for graduation recover and go on to graduate, and 3) the progress of students toward the completion of A-G requirements. We completed these analyses for the cohort of students who were first-time ninth graders in the 2007–08 school year. More than half of these students graduated in four years as part of the class of 2011.

This diagnostic is part of a partnership between SDP and LAUSD to bring data to bear on policy and management decisions. It is not an exhaustive set of analyses, nor does it contain specific policy recommendations. Rather, we hope it will help provide the community and LAUSD leadership with a clear snapshot of the current situation and prompt strategic thinking about how to improve outcomes for all students.

*These analyses were completed by members of the research team at the Center for Education Policy Research at Harvard University with the support of LAUSD staff and the LAUSD SDP Fellows.*
KEY FINDINGS IN LAUSD

Progress Toward Graduation

1. Fifty-nine percent of first-time ninth graders in 2007–08 graduated within four years as part of the class of 2011.

2. Graduation rates varied widely by high school. On average, high schools with higher average incoming eighth-grade English language arts (ELA) test scores had higher graduation rates; nevertheless, some high schools graduated a greater percentage of students than others with similar average incoming test scores.

3. Differences in the graduation rates of students from different racial backgrounds persisted after controlling for prior achievement. For students in the bottom quartile of prior ELA performance in eighth grade, 33% and 36% of Black and Latino students, respectively, graduated as compared to 53% and 58% of White and Asian students, respectively.

On Track for Graduation and Off-Track Recovery

4. Eighty-eight percent of ninth graders who advanced to 10th grade on track to graduate (i.e., having at least 55 credits) and with a minimum 3.0 cumulative grade point average graduated within four years.

5. The proportion of off-track students recovering and graduating on time varied widely by high school.

6. While only 59% of first-time ninth graders graduated within four years, 66% earned 230 cumulative course credits, 75% were enrolled in the district for four years, and 77% passed the California High School Exit Exam.

7. Students dropped out in relatively equal numbers across the first three years of high school.

On Track for A-G Requirements

8. Based on credit accumulation, about one-third of students were not on track to graduate on time after ninth grade. Nearly two-thirds of students were not on track to satisfy A-G requirements after the first year of high school.

9. In every year of high school, far fewer students were on track to complete A-G requirements as compared to those who were on track to graduate on time. After four years in high school, 59% of students graduated on time while only 16% met A-G requirements. In other words, one out of four graduates from the class of 2011 had completed A-G requirements when they graduated.
Focus on the Anticipated Class of 2011

These analyses focus on all students who first entered ninth grade during the 2007–08 school year and who did not transfer to another district during their four years of high school. If these students progressed seamlessly through high school to graduation, they would have graduated at the end of 2010–11 school year. Students in all LAUSD schools are included in these analyses. However, school-level analyses display comprehensive high schools only, excluding separate magnet schools, special education centers and other alternative schools. For more information on the data used for these analyses, please see Appendix 1.
2a. To what extent do four-year graduation rates vary by high school?

Graduation rates varied widely by high school in the district.

While LAUSD’s overall graduation rate was 59%, individual high school graduation rates varied widely. In Figure 2, each column represents the graduation rate for an LAUSD comprehensive high school. As one would expect, there was a wide range of graduation rates across LAUSD’s high schools. In fact, there was a 56 percentage point range in four-year cohort graduation rates across schools in LAUSD. Graduation rates did not vary systematically by whether high schools followed a single- or three-track calendar schedule.

2b. Do differences in average student achievement upon entering high school explain the variation in four-year graduation rates across high schools?

On average, high schools whose students had higher average incoming test scores had higher graduation rates; nevertheless, some high schools graduated a greater percentage of students than others with similar average incoming test scores.

Figure 3 shows on-time graduation rates by average prior performance for each LAUSD high school (as represented by a dot in the figure). We measure prior student performance by eighth-grade ELA California Standard Test (CST) scores. We use ELA test scores instead of math test scores because students take different math CST tests in eighth grade depending on their course-taking patterns.

As expected, high schools whose students had higher average incoming prior achievement tended to have higher graduation rates. However, high schools serving students with similar average incoming eighth-grade ELA test scores often had dramatically different graduation rates. For example, among the 17 schools with average prior scores between 310 and 315, graduation rates ranged from 52 to 82 percent. This suggests that while student incoming achievement is important, it does not fully explain school success in graduating students.
2c. How do graduation rates vary across schools with groups of students with similar prior achievement?

When comparing only students with similar incoming test scores, high school graduation rates still varied widely across schools.

Of course, the prior academic performance of students varies greatly within schools. This is masked by school-level averages. Figure 4 separates all students in the district into quartiles based on prior achievement in eighth-grade English language arts and shows the graduation rates of students by school in these prior achievement groupings. Each circle represents the graduation rate of all students within a school who fall into a particular quartile. The size of the circle corresponds to the number of students in a school at each quartile. Across the district, graduation rates were higher on average for the students with higher incoming eighth-grade ELA scores (represented by the four diamonds). For example, the graduation rate among students in the top quartile of eighth-grade ELA test scores was 83% on average while the graduation rate among students in the bottom quartile was only 36%.

While prior achievement partially explains graduation rate differences across schools, schools still graduated students within the same quartile of prior achievement at very different rates (represented by the range of blue dots within each of the four quartiles). For example, several schools graduated students who entered high school in the bottom quartile of achievement at a rate lower than 25% while a few schools graduated more than 50% of this group. Similar ranges in graduation rates across schools exist across all quartiles of prior achievement. Note that a number of schools graduated students in the bottom two quartiles of eighth-grade ELA CST scores at higher rates than some schools graduated students in the highest quartile of eighth-grade ELA CST scores.

![Figure 4: On-Time Graduation Rates Within Eighth-Grade ELA CST Test Score Quartile](image-url)
3. How do high school four-year graduation rates vary by students’ race and prior achievement?

Differences in the graduation rates of students from different racial backgrounds persisted after controlling for prior achievement. While these differences were less pronounced for students with top-quartile eighth-grade test scores, racial gaps remained.

As we observed in the prior school-level analyses, graduation rates are related to average prior achievement, but not perfectly. When we further group students by both their race and prior proficiency quartile, we see that some of the differences disappear—but not all.

On-time high school graduation rates for Black, Latino, White, and Asian students were 51%, 57%, 70%, and 77%, respectively (Figure 5). As Figure 6 depicts, these differences persisted when students’ academic achievement prior to entering high school was taken into account. In this graph, we divided students into quartiles by incoming test scores in eighth-grade English language arts. The top quartile students, for instance, are those who performed in the top 25% of students in LAUSD. We display graduation rates disaggregated by race for students within each test-score quartile.

At the lower levels of prior achievement, the difference between the groups is stark. While these differences are smaller at the higher levels of prior achievement, racial gaps in graduation rates persist. The graduation rates for Black, Latino, White, and Asian students in the highest quartile were 78%, 83%, 85%, and 87%, respectively. In the bottom quartile, 33% of Black students, 36% of Latino students 53% of White students and 58% of Asian students graduated on time.

Note that the distribution of students across prior achievement quartile is also not evenly distributed by race. For instance, over half of both White and Asian students scored in the highest quartile, and less than 10% of each group scored in the lowest quartile. In contrast, 20% of Latinos scored in the highest quartile of prior performance, and 29% scored in the lowest quartile.
4. How do ninth-grade credit accumulation and grade point average (GPA) relate to four-year graduation outcomes?

Eighty-eight percent of ninth graders who advanced to 10th grade on track to graduate (i.e., having at least 55 credits) and with a minimum 3.0 cumulative GPA graduated from high school within four years.

Performance in ninth grade is strongly related to graduating on time in LAUSD. Figure 7 presents the status of students at the end of their fourth year in high school disaggregated by their end of ninth grade on-track status. Among students on track to graduate at the end of ninth grade, those who had at least a 3.0 cumulative GPA were more likely to graduate than those who were on track, but had a lower GPA. For example, 88% of students who were on track and had at least a 3.0 GPA graduated on time while only 69% students who were on track and had below a 3.0 GPA graduated on time—a difference of 19 percentage points.

Those who fall off track during their first year of high school were far less likely to graduate than their peers. Yet, many of these students do not ultimately leave school. Twenty-six percent of off-track students recovered enough credits to graduate within four years. Thus, recovery is possible, even for students far behind at the end of their first year.
5. To what extent do recovery rates vary across LAUSD high schools?

The proportion of off-track students recovering and graduating on time varied widely by high school.

Schools differ substantially across LAUSD both in the total percentage of students who end the ninth grade off track and in the percentage of off-track ninth graders who recover to graduate on time. Figure 8 presents the percentage of all ninth graders who were on track for graduation (orange bars), who were off track for graduation at the end of ninth grade but graduated on time (yellow bars), and who were off track for graduation and did not graduate on time (blue bars). The high schools are sorted in ascending order by the percentage of total students who were off track after ninth grade (the sum of the yellow and blue section of the bars), which ranged from 10% to 57% of students in LAUSD schools.

If all schools recovered the same percentage of off-track ninth-graders, the yellow bars in Figure 8 would also be sorted in ascending order. Instead, Figure 9 isolates the range of recovery rates for students who ended the ninth grade off track. Between 9% and 58% of off-track ninth graders recovered to graduate within four years.

A deeper look into schools with the highest recovery rates may provide insight into successful strategies for helping off-track students graduate on time and college ready.
SDP COLLEGE-READINESS DIAGNOSTIC

ANALYSES: ON TRACK FOR GRADUATION AND OFF-TRACK RECOVERY

6. What percentage of students meet all three key milestones for graduation in four years?

While only 59% of first-time ninth graders in 2007–08 graduated on time, 66% earned 230 cumulative course credits, 75% enrolled in the district for four years, and 77% passed the California High School Exit Exam.10

Figure 10: Attainment of Key Milestones for Graduation

<table>
<thead>
<tr>
<th>Enrolled 4 Years</th>
<th>Earned 230 Credits</th>
<th>Passed CAHSEE</th>
<th>% of Students Meeting Specific Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td>Less than 1%</td>
</tr>
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<td></td>
<td></td>
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<td>4%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Less than 1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17%</td>
</tr>
</tbody>
</table>

X = Met Milestone

Passing the California High School Exit Exam (CAHSEE) and earning 230 cumulative course credits in specified courses are two of the key graduation requirements for students in LAUSD. For most students, meeting all of these requirements takes at least four years of enrollment. Digging into what percentage of students achieved some of the milestones needed for graduation without graduating in four years may help to develop focused strategies to increase on-time graduation.

Figure 10 presents a table of the three major milestones students must achieve in order to graduate. Of students in the anticipated class of 2011, 63% met all three milestones required for graduation by the end of the 2011 school year. Yet, only 59% graduated (as reported earlier), suggesting a possible mismatch between the credits earned and courses needed for graduation for 4% of students.

A large majority of students, 83%, achieved at least one of these three milestones. Twelve percent of students were enrolled all four years but did not meet the other requirements. This group includes students who remained engaged in high school and who may benefit from focused academic interventions. Note, however, one-quarter of these students have individual education plans (IEPs) and may be on individualized academic trajectories. Of these students, 6% did not pass the CAHSEE, 2% did not achieve 230 course credits, and another 4% did not achieve either requirement.

On the other hand, the group of students who passed the CAHSEE but did not meet the other requirements represents students who performed at grade level competency standards and who may benefit from outreach to keep them enrolled. Eight percent passed the CAHSEE but were not enrolled all four years or did not earn the required course credits.
7. When do high school students in LAUSD drop out?

Students dropped out in relatively equal numbers across their first three years of high school.

Figure 11 presents the percentage of students who dropped out after the first, second, and third years of high school. For the purpose of this analysis, we define dropouts as any students who do not re-enroll in the district and who are not known to have transferred to another school or district.

A relatively constant percentage of students disappear each year. By the end of ninth grade, 9% of the 2007–08 cohort of first-time ninth graders had dropped out. By the end of the second year, an additional 7% dropped out. Finally, by the end of the third year, an additional 8% dropped out for a 24% cumulative drop-out rate by the end of the third year. These numbers suggest that the drop-out challenge is not simply concentrated in the first year of high school. We also find that the majority of students who dropped out were not on track to meet graduation requirements in the prior year based on the number of credits that they earned.

Figure 11: Dropout Rates

By Year and On-Track to Graduate Status
8. How does the percentage of students on track to graduate and the percentage of students on track to meet A-G requirements differ at the end of ninth grade?

Based on credit accumulation, about one-third of students were not on track to graduate on time. Nearly two-thirds were off track to satisfy A-G requirements after the first year of high school.

Figures 12 and 13 present percentage of first-time ninth graders in 2008 who were on-track for graduation and A-G requirements at the end of ninth grade. While 66% of students were on track to graduate, only 36% of students were on track to complete A-G requirements. In particular, there was a much smaller proportion on track to meet A-G requirements with a GPA below a B average after ninth grade than the proportion of students on track to meet graduation requirements with a GPA below a B average.

Given that the graduation requirements for the class of 2011 did not require students to meet A-G standards, this does not represent the expected number of students who will be off track to graduate once the new requirements are in place.
9a. What percentage of the anticipated class of 2011 was on track after each year of high school?

In every year of high school, far fewer students were on track to complete A-G requirements as compared to those who were on track to graduate on time. After four years in high school, 59% of students graduated while only 16% met A-G requirements.

Figure 14 presents the progression of 2007–08 first-time ninth graders toward meeting their graduation requirements, represented by the top red line, and toward meeting A-G requirements for admission to UC and CSU schools, represented by the bottom blue line. Sixty-six percent of first-time ninth graders were on track to graduate on time based on credit accumulation as compared to only 36% who were on track to complete A-G requirements. The difference grew over time so that, after four years of high school, 59% of students graduated as compared to only 16% who met A-G requirements.

In the aggregate, we also see improvement in the rates of students who meet graduation requirements. Fifty-nine percent of students graduated after four years, while 56% were on track to graduate at the end of year three, indicating the recovery of credits for some students between years three and four. In contrast, the percentage of students who are on track to meet all A-G requirements declined across the years.

![Figure 14: Rates of Students On Track for Graduation and A-G Requirements](image-url)
9b. What percentage of graduates had completed A-G requirements by the end of 12th grade?

One out of four graduates from the class of 2011 had completed A-G requirements when they graduated.

Figure 15 shows the percentage of on-time graduates (59% of first-time ninth graders in 2007–08) who completed A-G requirements. Specifically, of the students who graduated in 2011, only one in four completed A-G requirements by the end of 12th grade. In other words, three out of four graduates in 2011 were not prepared to enroll in a four-year state college. If A-G completion were a graduation requirement, we would expect that a larger proportion of LAUSD students would fulfill the requirements. However, there is still a substantial hill to climb to ensure more LAUSD students have met the prerequisites for four-year colleges.
SDP COLLEGE-READINESS DIAGNOSTIC

APPENDIX 1: DATA SOURCES

Which students are included in these analyses?

We use student-level data from all four years of high school for the anticipated class of 2011. These students were first-time ninth graders in the 2007–08 school year. We combine data from the 2007–08 to the 2010–11 school years for these students. For all analyses, we examine a ninth-grade cohort, which includes all students who were first-time ninth graders in 2007–08. The ninth-grade cohort does not include students who transferred into LAUSD after ninth grade and does not include students who transferred out of LAUSD after ninth grade.

Which schools are included in these analyses?

For analyses that display information at the school level (for example, Figure 2 on page 6), separate magnet schools, special education schools, and other alternative schools are removed. However, all students (including those in magnet schools, special education centers, etc.) are included in analyses that do not disaggregate to the school level.

Which tests are used to identify prior student achievement?

For analyses that display information on prior student achievement (for example, Figure 3 on page 6), we use eighth-grade student scores on the ELA portion of the California Standards Tests. We do not use student scores on the math CST because students take different tests in eighth grade depending on the courses they have taken.
On Track for Graduation Status and Off-Track Recovery

We determine students’ on- and off-track status for graduation in each of the first four years of students’ high school careers based on the number of cumulative credits a student has in each year. In order to graduate, a student must earn at least 230 credits, and in order to be on track for graduation, a student must earn a minimum number of credits by the end of each year, as detailed in the following table.

<table>
<thead>
<tr>
<th>Year in High School</th>
<th>Minimum Cumulative Credits Needed to Be on Track for Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>55</td>
</tr>
<tr>
<td>Year 2</td>
<td>110</td>
</tr>
<tr>
<td>Year 3</td>
<td>170</td>
</tr>
<tr>
<td>Year 4</td>
<td>230</td>
</tr>
</tbody>
</table>

On Track for Graduation

A-G is a 15-unit pattern of high school courses designed as prerequisites for admission into the California State University and University of California systems.

The UC/CSU systems currently require their applicants to earn a mark of C or better in all 15 courses that they regard as necessary for college entrance. These UC/CSU-certified courses—commonly known as the A-G requirements—are (a) two years of social science, (b) four years of English, (c) three years of math, (d) two years of science, (e) two years of foreign language, (f) one year of visual and performing arts, and (g) one year of a college-prep elective.

In pursuit of its goal to graduate every student college prepared and career ready, the LAUSD Board of Education passed a resolution to make A-G coursework a high school exit requirement starting with the graduating class of 2016. To meet this requirement, students in the graduating class of 2016 must pass all 15 A-G courses with a D or better. The graduating class of 2017 must pass all 15 A-G courses with a C or a better.
SDP COLLEGE-READINESS DIAGNOSTIC

NOTES

Endnotes


3. The finalized LAUSD four-year cohort graduation rate was published in August 2012 as 62%. Our estimate differs because it does not include summer school graduates or students who transfer into the district and graduate on time.

4. Scale scores range from 150 to 600 for all grades and subjects included in CST testing. Scale scores are used to equate a CST test over the years and determine performance levels.

5. Note that we do not show schools with fewer than 20 students per quartile.

6. All differences between subgroup graduation rates at the top quartile of prior achievement are statistically significant at the p<0.05 level, except for the difference between White and Latino graduation rates.

7. All differences between subgroup graduation rates at the bottom quartile of prior achievement are statistically significant at the p<0.05 level, except for the difference between Black and Latino graduation rates.

8. These analyses follow upon the pioneering work conducted at the Johns Hopkins University and the University of Chicago Consortium on Chicago School Research. See, for instance, the following: Allensworth, E., & Easton, J. (2005). The ontrack indicator as a predictor of high school graduation. Chicago, IL: Consortium on Chicago School Research.


9. Note that we do not show schools with fewer than 20 students off track for graduation.

10. Students who graduated early are included with those who were enrolled for all four years.

11. In most cases, being on track for meeting A-G requirements means that students were also on track for graduation because A-G requirements are more stringent than current graduation requirements. However, 1% to 5% of students by year were on track for A-G requirements but did not accumulate sufficient credits to be on track for graduation.
SDP COLLEGE-READINESS DIAGNOSTIC

NOTES

Figure Notes

All data come from LAUSD administrative records.

Page 5

Figure 1. Sample: 43,578 LAUSD first-time ninth graders in the 2007–08 school year.

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Figures 2 and 3. Sample: For calculating district average, 43,578 LAUSD students. For calculating individual schools, we include schools with more than 20 students that are also not magnet centers, special education schools, or in local districts R, S, and Y. The resulting sample for Figure 2 is 35,325 LAUSD first-time ninth graders in 2007–08. For Figure 3, we only include students with eighth-grade ELA CST scores. The resulting sample is 30,314 LAUSD students.

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Figure 4. Sample: For calculating individual schools and within quartile averages, we include schools with more than 20 students in each quartile that are also not separate magnet centers, special education schools, or in local districts R, S, and Y. We only include students with eighth-grade ELA CST scores. The resulting sample for individual schools is 30,102 LAUSD students.

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Figures 5 and 6. Sample: We include Black, Latino, White, and Asian students with eighth-grade ELA CST scores. The resulting sample is 37,179 LAUSD students.

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Figure 7. Sample: 43,578 LAUSD students.

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Figures 8. For calculating district average, 43,578 LAUSD students. For calculating individual schools, we include schools with more than 20 students that are also not magnet centers, special education schools, or in local districts R, S, and Y. The resulting sample for Figure 2 is 35,325 LAUSD first-time ninth graders in 2007–08.

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Figure 9. For calculating district average, we include 14,783 LAUSD first-time ninth graders who were off-track to graduate in 2007–08. For calculating individual schools, we include schools with more than 20 students that are also not magnet centers, special education schools, or in local districts R, S, and Y. The resulting sample for individual schools is 12,576 LAUSD first-time ninth graders who were off-track to graduate in 2007–08.

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Figure 10. Sample: 43,578 LAUSD students.

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Figure 11. Sample: 43,578 LAUSD students.

Page 14


Page 15

Figure 14. Sample: 43,578 LAUSD students.

Figure 15. Sample: 25,736 LAUSD students who graduated within four years.

The Strategic Data Project thanks Emily Mohr, Nicole Wagner, Hansheng Chen, and LAUSD staff members who participated in the LAUSD College-Readiness Steering Committee for their input and guidance. These analyses were conducted by Jon Fullerton, Julia Bloom-Weltman, and Andrew Bacher-Hicks.