EDUCATION TRUST HIGHER EDUCATION PRACTICE GUIDE

Learning From High-Performing and Fast-Gaining Institutions

The Education Trust

Top 10 Analyses to Provoke Discussion and Action on College Completion

Learning From High-Performing and Fast-Gaining Institutions

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INTRODUCTION

With growing concern for postsecondary degree attainment sweeping public discourse in state and national circles, the traditional emphasis on access and enrollment headcounts is expanding to include a keen interest in student progress and completion.

In many cases, though, conversations among policy experts are well ahead of conversations on college campuses. Too often, many still think it is enough to provide opportunity to students: What they do with that opportunity is up to them.

Institutions that don't make the shift — from focusing on access alone to focusing on access and success — aren't likely to fare well in the new environment of performance-based funding and increasingly hard-edged accountability. More important, neither will their students. In this economy, "some college" won't get young adults very far; we need to help more of them get the degrees that will.

Fortunately, campus leaders who are struggling with how to get their faculties and staffs to make this transition don't have to make up the playbook for themselves. Around the country, there are colleges and universities that have already made the shift and have the improved outcomes data to validate it. In every case, these institutions have improved results markedly over a sustained period of time; almost all are graduating more of their students — especially students of color and, where we have the data, low-income students — than peer institutions throughout the country.

For this guide, we've examined practices at eight such institutions:

Florida State University, a 31,000-student university that increased graduation rates for freshmen Pell Grant recipients from 61 percent in 2005 to 72 percent in 2012, nearly the same rate as non-Pell students

Georgia State University, a diverse, urban institution where underrepresented minority students graduate at a higher rate than their white peers

San Diego State University, where graduation rates for Latino students — a quarter of all undergraduates — nearly doubled from 31.4 percent in 2002 to 58.8 percent in 2011 (Table 1)

University of North Carolina at Greensboro, a 15,000-student public university that has eliminated the graduation rate gap between black and white students

University of Southern California, a private, nonprofit university that increased graduation rates for Latino students 19 points to nearly the same rate as its white students

University of Wisconsin–Eau Claire, where graduation rates for freshmen Pell Grant recipients increased from 49 percent in 2005 to 60 percent in 2010

Virginia Commonwealth University, which increased the graduation rate for black students 13 points to roughly the same rates as its white students

University of Alabama, where course redesign efforts dramatically improved pass rates in gateway mathematics courses

While each institution took a somewhat different path on its journey toward improving student retention and success, there are common elements that cut across them all. Among the most important is the role of campus leadership — including the president but especially the provost — in helping to make student success a high, institution-wide priority. But close behind that is the early and ongoing use of data in critical tasks along the way, from the initial effort to galvanize a sense of urgency about the problem of student attrition to ongoing efforts to design and test interventions.

In almost every case, these institutions now have very sophisticated student success data management systems that facilitate ongoing inquiry and literally automate much of the work, including detailed monitoring of student progress with immediate alerts to both students and their advisers when key milestones are missed. But none of them started out that way. Instead, what they typically had was a self-described "data geek" in a key leadership role whose own curiosity about what the data might say about various aspects of student success started the ball rolling.

Table 1: Student Success Gains at San Diego State University Under President Weber

Student Group	Six-Year Graduation Rate of Students Who Began in 1996	Six-Year Graduation Rate of Students Who Began in 2005	Percent Change Over Time
Overall	38.1%	65.6%	+ 72.2%
Black	28.6%	55.8%	+ 95.1%
Latino	31.4%	58.8%	+ 87.3%
White	42.4%	68.6%	+ 61.8%

And lest we scare anyone away, we want to be clear: Two of our favorite data geek provosts over the years were former professors of English literature and cultural anthropology,

respectively. The initial work doesn't take great data prowess; indeed the complexity that can result from such prowess often gets in the way in the initial stages. What is needed, it turns out, are simple but compelling analyses that dramatize the problem and invite broad-based problem-solving, especially among faculty. For example, when former San Diego State University President Steve Weber joined the campus in 1996, he used shared governance to drive the campus forward. A close observer of the push to make completion by Latino students an institution-wide priority described the efforts this way: "You have to appreciate faculty, love what they do and, in that sense, really value their opinions and perspectives because they are the ones who will make these changes."

To save leaders at other campuses from having to invent an initial set of analyses for themselves, we're sharing 10 of the analyses that leaders at these eight institutions (and others) found to be particularly powerful in galvanizing attention and action. Some won't be appropriate to your institution; just pass them by. Hopefully, there will be a few here that you can use and others that will inspire important questions relevant to your own institution.

For each analysis, we provide its inspiration, process, and insights. Where possible, we identify subsequent interventions made in response to insights arising from relevant analyses and provide information on the effectiveness of these interventions. Bear in mind, however, that improvements in retention and graduation rates are usually a result of multiple, simultaneous efforts, rather than just one or two.
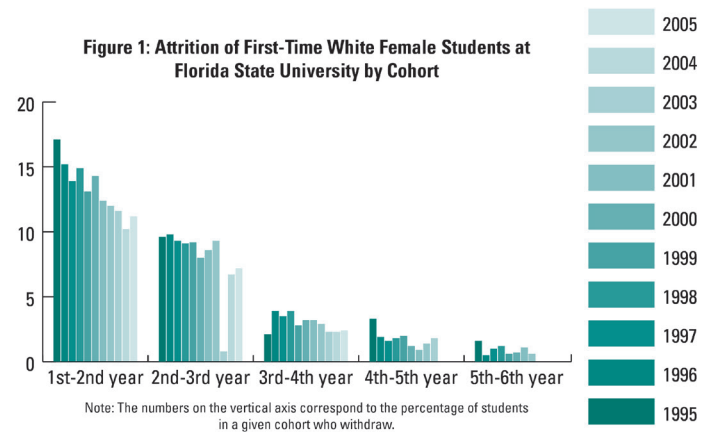
ANALYSIS 1

HOW MANY STUDENTS DO WE LOSE ALONG THE WAY?
A LOOK AT YEAR-TO-YEAR RETENTION RATES

Most institutions produce reports on the number of first-year students who don't return the following fall. Because the fall-off between the first and second year tends to be largest, these analyses often prompt the movement of resources and activity toward what seems to be that "all-important" freshman year. But, what happens after the first year? What do the retention rates look like in subsequent years? Yes, at most universities, fall-offs are largest between year one and year two. But, if you add the students who fall off in subsequent years, that figure often totals — or exceeds — that first-to-second-year loss.

It is also important to look beneath the averages and ask, "Are leaving patterns different for different groups of students?"
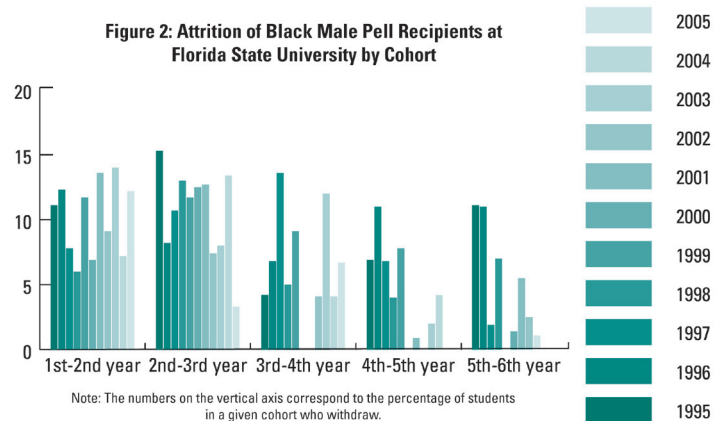
The experience at Florida State University (FSU) shows the benefits of looking further into the data. Like most universities, FSU had focused a lot of energy on retaining freshmen. However, when campus leaders took a more comprehensive look at the freshmen cohorts entering from 1995-2005 (Figure 1), they learned that they had missed something important. Yes, as expected, the highest attrition occurred between the first and second years for all groups (white female Pell recipients, Latino male non-Pell, etc). And most groups had especially small attrition rates after the third year. That is, all except for one. For African American male Pell recipients (Figure

Figure 1: Attrition of First-Time White Female Students at Florida State University by Cohort

Note: The numbers on the vertical axis correspond to the percentage of students in a given cohort who withdraw.

2), retention rates were a consistent issue every year, not just between the first and second year of attendance.

Leaders at FSU responded by creating the Center for Academic Retention and Enhancement (CARE) in 2000, which centralized the coordination of a number of previously disconnected departments, including transition, engagement, and academic support services, to assist traditionally underrepresented and disadvantaged populations. All students accepted into the summer bridge program are first-generation college students and Pell-eligible, including many African American students. Using such efforts as mandatory second-year success coaches in addition to the more common first-year efforts, FSU has been able to focus its efforts on student groups who were at a higher risk of not progressing.

Even if your institution doesn't have a group of students with unusual retention patterns, disaggregating retention data by student group and tracking each group over four to six years can illustrate the toll that attrition takes. Displaying the data in chart form, like the examples here, is a way to invite interest and action from faculty and staff (Tables 2 and 3).

Figure 2: Attrition of Black Male Pell Recipients at Florida State University by Cohort

Note: The numbers on the vertical axis correspond to the percentage of students in a given cohort who withdraw.

Joseph Yeado is higher education research and policy analyst, and Kati Haycock is president at The Education Trust. Rob Johnstone and Priyadarshini Chaplot are from the National Center for Inquiry and Improvement. © Copyright 2013 The Education Trust.
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You should do a similar analysis with transfer students. Yes, we know that many institutional leaders (especially those from the two-year colleges sending students on to four-year institutions) say things like "Transfer students are as or more successful in obtaining degrees as those who start as freshmen."

But are they? As the analysis below from one institution's data shows, transfer students have a success rate of 61 percent, which is 3 percentage points lower than the rate for first-time freshmen at that same institution (Table 4).

Transfer students, however, are not freshmen. Many have been in college for at least two or three years, have accumulated at least 60 credits, and have junior status. Thus, a more telling analysis would compare transfer students with freshmen students retained to junior status. Here, we see that attrition rates for transfer students are considerably higher. Transfer success is clearly something this college needs to work on, not just freshman retention.

ANALYSIS 2

BUT ARE THOSE RETURNING STUDENTS ACTUALLY SOPHOMORES?
TRACKING THE RATE OF SECOND-YEAR STUDENTS WHO ACHIEVE SOPHOMORE STANDING

At many universities, even very high first-to-second-year retention rates don't necessarily lead to high completion rates. Why? Because many of the students who return don't complete anywhere close to the credits they need to be on track to complete their degrees. And, over time, as they fall further and further behind, they can easily just disengage from their studies.

That's what leaders at Georgia State University found when they tried to understand why overall retention rates resting consistently between 80 percent and 83 percent still weren't resulting in comparable graduation rates. If students were staying in college, why weren't they graduating?

Here's what they found: Although 80 percent of freshmen in 2000 returned for the 2001 academic year, only 22 percent were earning enough credits to achieve sophomore standing by the beginning of that second year (see Figure 3). Indeed, average freshmen credit hours hovered around 10 per semester — far from the 15 credit hours per semester that research at other universities had suggested was a key milestone for eventual completion.

When they dug further into the data, it turned out that there were many contributing issues. Many students were getting D's, W's, and F's in critical courses. Low-income students were reducing their credit hours in an effort to keep their semesters more affordable.

How did Georgia State respond? Working together, administrators and faculty:

- Organized freshmen learning communities that now serve 70 percent of first-year students and are specifically designed to help students earn 16 units by the end of the first term.

Table 2

For Every	Returned Year Two	Returned Year Three	Returned or Graduated Year Four	Returned or Graduated Year Five	Returned or Graduated Year Six
100 White Freshmen	80	74	72	70	65
100 Latino Freshmen	75	70	65	63	59
100 Black Freshmen	72	70	62	59	52

Table 3

| Number of Freshmen in Fall 2008 Cohort	Number Who Earned a Degree in 6 Years	Number Without a Degree After 6 Years	Number Who Would Have Earned a Degree if Group Had Same Success Rate as Whites
White: 1,638	1,017	621	n/a
Black: 414	165	249	257
American Indian: 24	9	15	15
Latino: 393	200	193	244

Table 4: Graduation Rates for First-Time Freshmen and Transfer Bachelor's Degree-Seeking Students in 2006/12 Cohort

Students	Cohort (#)	Six-Year Graduation Rate
Freshmen	1,357	64%
Transfer	444	61%

Comparison of Graduation Rates of Third-Year Students and New Transfer Students in 2006/12 Cohort

Students		Number Who Graduated in Six Years	Percent of Students With a Degree in Six Years
Third-Year Students	977	868	89%
Transfers	444	271	61%

Figure 3: First-Year Retention and Progression Rates at Georgia State University
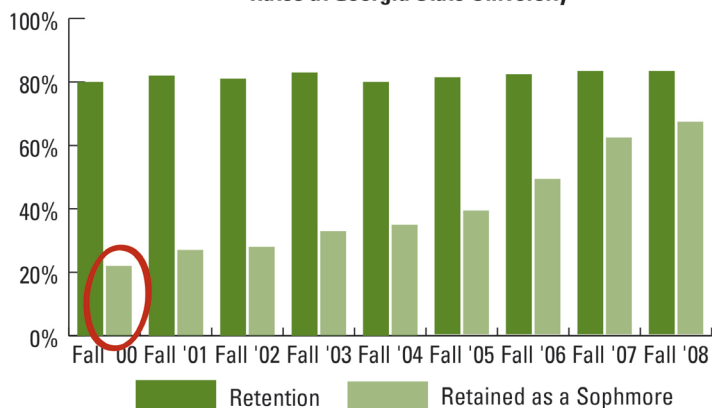
- Redesigned key courses, utilizing hybrid instructional models and supplemental instruction. For example, by converting all 7,500 annual seats in college algebra into a hybrid model, blending an hour of lecture with two hours of group time in a computer lab open and staffed 24/7, the university was able to lower the rate of D's, W's, and F's from 43 percent to 21 percent.

- Established a post-freshman year Summer Success Academy for the 200 or so weakest first-year students, offering them an opportunity to earn another seven credits.

Through these and other targeted efforts, Georgia State has tripled the proportion of its returning students attaining sophomore standing, from 22 percent in 2000 to 67 percent in 2008. Meanwhile, graduation rates have increased from 41 percent in 2006 (students who began in 2000) to 47 percent in 2011 (students who began in 2005).

ANALYSIS 3

WHY AREN'T OUR STUDENTS ACCUMULATING THE CREDITS THEY NEED TO BE ON TRACK?
ANALYZING THE IMPACT OF COURSE WITHDRAWALS

In digging deeply into their data, teams at many universities find — as did Georgia State — that some students don't even attempt the 15 credit hours per semester that it takes to be on track to a degree. There are many possible contributors here, including per-unit pricing policies and well-meaning counselors who, despite research to the contrary, believe that students with weaker entering skills are better off taking less than a full load.

But it often turns out that course withdrawals are a big contributor. When leaders at Virginia Commonwealth University analyzed their data to better understand who took four years, five years, or six years to graduate, they saw a pattern in the course withdrawal numbers. On average, on-time graduates had withdrawn from one course or less over the duration of their collegiate careers. Students who graduated in five years had, on average, withdrawn from four courses, while

those who graduated in six years had withdrawn from roughly eight courses (Table 5).

And there were interesting differences among different groups of students. For example, international students were attempting as many as 180 units and earning about 135, withdrawing from almost 50 units during their academic careers. In contrast, in-state students graduating in six years were attempting an average of 145 and earning an average of 135 units. In both cases, students only need 120 units for a degree. Yet, they were taking — and paying for — an extra semester's worth of credits or more. (Later in this guide, we discuss how to get students to a degree without excess credits.)

Evolving over a series of decades, the university's withdrawal policy enabled students to drop a course late in the semester. Whether students withdrew because the course was too difficult or because they wanted only an A in the course, withdrawing from courses was shown to dramatically extend college careers, if not postpone completion indefinitely. Furthermore, the last day to add courses came before the last day to withdraw from courses, erasing the opportunity for some students to take the seats made available by those who dropped the courses. These new insights prompted university officials to review the very liberal withdrawal policy, specifically its impact, both positive and negative, on students.

Table 5: Time to Graduation and Course Withdrawals at Virginia Commonwealth

Number of Years Taken to Graduate	Course Withdrawals (on average)
4	0-1
5	4
6	8

ANALYSIS 4

WHAT ARE SOME OF THE OTHER REASONS OUR STUDENTS AREN'T ACCUMULATING THE CREDITS THEY NEED?
ANALYZING SUCCESS RATES IN THE 25-35 COURSES WITH THE LARGEST ANNUAL ENROLLMENT

While most colleges and universities offer more than 1,000 — or even 2,000 — courses, research by Carol Twigg and others at the National Center for Academic Transformation (NCAT) has shown that the 25-35 courses with the largest total enrollment often account for about a third of all enrollments in any academic year — and an even larger fraction of course failures.[1] Generally, these are introductory or developmental courses taught each year by multiple faculty members, typically without much coordination. But, as NCAT has also shown, campuses that take on the redesign of those courses with student success in mind can achieve marked improvements, while also often lowering the cost of instruction.[2]

But it is hard to generate energy for course redesign without a wake-up call.

Fortunately, the data necessary for that wake-up call are generally readily available in most institutional record systems or research offices.

The core idea is simple. Identify the 25-35 courses with the largest annual enrollments. List the D, F, and withdrawal rates for each; summarize with overall "course success" rates. Look at the data for all students, then also analyze separately for underrepresented minorities and all other students. This will help you to know where to target your efforts to have the maximum impact on closing your success gaps.

Before the University of Alabama got into an aggressive course redesign effort, its D, F, and W rates were pretty typical. Yet when those rates were shared with faculty, most were shocked. Campus leaders decided to start by redesigning the first credit-bearing mathematics course, college algebra, where data revealed more than half of the students failed. Their success led, over time, to serious redesign in many of the university's largest courses — and to serious improvements in student success, especially for underrepresented minority students (Table 6).

ANALYSIS 5

WHO'S STRUGGLING WITH MATH: ONLY DEVELOPMENTAL STUDENTS? ANALYZING SUCCESS RATES IN THE FIRST CREDIT-BEARING MATH COURSE

A few years ago, The Education Trust convened a group of university system heads around the topic of student success in mathematics. Instead of asking leaders to come equipped with the numbers they were used to reciting — the low success rates in their developmental math courses — we asked them to bring along success data for their first credit-bearing courses. In other words, the students who had shown, generally through some combination of grades, course taking, and test results, that they were ready for college-level math.

When we asked them to share the data with others in the room, there was a long, uncomfortable silence. Then one system leader spoke up: "I don't know whether to be more embarrassed by the numbers" — in his system, pass rates for college algebra hovered around 45 percent — "or by the fact that I never even thought to ask for them." Others said much the same thing. Though success rates for the different systems, not to mention the campuses within them, varied from lows in the 30s to highs in the 60s, no system head had previously had even a clue that success rates in this critical course were so miserably low.

So, before you start digging further into success rates in developmental courses, we suggest you start where the system heads started that day: by examining success rates in the first college-level mathematics course offered by your institution.

Table 7 shows what leaders at other institutions found when they looked at their data prior to beginning course redesign

work with NCAT. However, we suggest that you dig further and look underneath the averages to note any significant differences by race, gender, or Pell status.

The good news here is that universities that take this problem head on, substantially redesigning those initial mathematics courses, can bring about significant changes in these patterns very quickly. The University of Alabama is one such example.

Table 6: Success Rates in the First Three Mathematics Courses at the University of Alabama Over Time

	Math 005	Math 100	Math 110
Fall 2005	64.2%	67.2%	66%
Fall 2006	73.6%	73.8%	70.3%
Fall 2007	74%	75.2%	74.8%
Fall 2008	67.8%	78.1%	65.5%
Fall 2009	67.2%	70.5%	77.7%
Fall 2010	64%	72.2%	73.3%
Fall 2011	66.7%	65.3%	72.7%
Fall 2012	84.6%	65.1%	80.1%

University administrators were inspired by the potential of the "Math Emporium" model piloted at Virginia Tech, though there was resistance from faculty members. That resistance began to subside after a faculty delegation visited Virginia Tech to witness the program in action. Within a year, Alabama had hired Virginia Tech's math department chair, Robert Olin, to be the new dean of arts and sciences and to lead the course redesign work.

Similar to the redesign efforts at Georgia State, the University of Alabama replaced traditional classroom instruction with blended learning in a computer lab. Using common textbooks, exams, and quizzes, course redesign allowed students to get help immediately when they encountered obstacles, instead of waiting for faculty office hours the following week. This enabled instructors to focus their time and energy on individual assistance. Taken together, these efforts represent a

Table 7: Drop-Failure-Withdrawal Rates for Mathematics, 2000

Georgia State University	45%
Louisiana State University	36%
Rio Salado Community College	41%
University of Alabama	60%
University of Missouri–St. Louis	50%
UNC–Greensboro	77%
UNC–Chapel Hill	19%
Wayne State University	61%

marked departure from the math courses traditionally offered at the University of Alabama.

While the results did not shift overnight, they moved up pretty fast. Today, success rates in the course that once hovered around 50 percent are now considerably higher. Moreover, the wide black-white gap in course success that campus leaders noted with chagrin 10 years ago has completely disappeared. Students like the experience so much that they have pressed — successfully — for the redesign of other math courses.

It is important to note, though, that analyses of course success rates may point up a variety of needs. Data teams at many institutions, for example, find that even students who are successful in one course may not be successful in the one that follows it — raising questions not only about course design, but about vertical alignment. Teams may also find that, even in courses with common end-of-course exams, there are big differences in student success among sections taught by different faculty members — raising another set of questions. These can be important prompts for discussions about needed changes in both policy and practice.

ANALYSIS 6

HOW MANY STUDENTS WHO NEED REMEDIATION SUCCEED AT OUR INSTITUTION?
DIGGING INTO THE DATA ON DEVELOPMENTAL COURSES, ESPECIALLY IN MATH
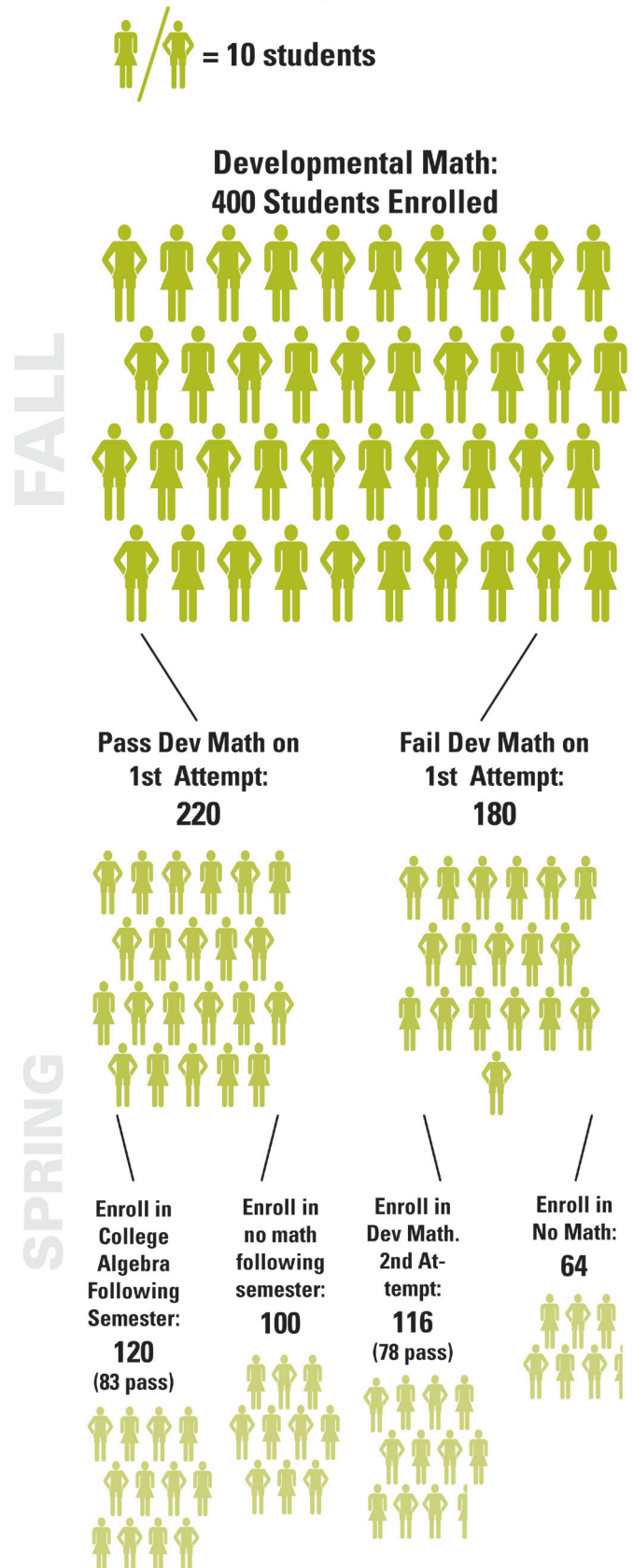
Between 60 and 70 percent of incoming community college students typically must take at least one developmental mathematics course before they can enroll in college-credit courses.[3] However, 80 percent of the students who place into developmental mathematics do not successfully complete any college-level course within three years.[4] Many students spend long periods of time repeating courses, and most simply leave college without a credential.

The numbers in four-year colleges and universities generally aren't quite this high. About 30 percent of students at four-year institutions took at least one remedial math course.[5] But here, the range is wide and success rates are often low, slowing — or even stopping — progress to a degree.

As shown in Figure 4, only 83 of the 400 students who needed developmental math and took it during the fall semester (often a problem in institutions that don't require students to immediately take any needed remedial courses) successfully completed a credit-bearing math course by the end of their first year. Given research suggesting that completing that credit-bearing math course during the freshman year roughly doubles a student's chance of completing the bachelor's degree, these numbers cry out for attention.[6]

What can be done? There is a lot of innovation currently going on in developmental education, including in some of the universities interviewed for this guide. Georgia State University, for example, brought course redesign to their developmental math courses using 24/7 labs — staffed by upper-level undergraduates — to make sure students are actually doing a

Figure 4

= 10 students

Developmental Math: 400 Students Enrolled

FALL

Pass Dev Math on 1st Attempt: **220**

Fail Dev Math on 1st Attempt: **180**

SPRING

Enroll in College Algebra Following Semester: **120** (83 pass)

Enroll in no math following semester: **100**

Enroll in Dev Math. 2nd Attempt: **116** (78 pass)

Enroll in No Math: **64**

lot of mathematics and getting help immediately when they are stuck. Indeed, NCAT-supported work in mathematics is now so strong that participating institutions can radically improve their course success rates very quickly.

Others are experimenting with "co-requisite" remediation, where students are automatically placed into the credit-bearing math course, but get support — sometimes in the form of an extra developmental course, sometimes in the form of extra tutoring — on the side. Many community colleges, too, are participating in the Carnegie Foundation for the Advancement of Teaching's "Statway" or "Quantway" initiatives involving redesign of the developmental sequence and the first credit-bearing course into one year-long course, so students complete the latter during freshman year. The University of Texas' Charles A. Dana Center has a similar effort, called "Mathway," operating with community colleges in Texas.

It's not clear — or at least not yet — that there is one best way to do this. What is clear is that leaving things as they are is not an option, or at least not for institutions that are committed to succeeding with the full range of students they admit.

ANALYSIS 7

WHAT IS THE ROLE OF THE MAJOR — OR A LACK THEREOF — IN STUDENT SUCCESS?
ANALYZING THE DATA ON SUCCESS FOR STUDENTS IN DIFFERENT FIELDS

When the leaders at Virginia Commonwealth University explored their data, they saw very different retention patterns for students with different majors. By the third year, more than 90 percent of nursing students were still there, compared with only 67 percent of students whose major was initially undeclared.

The SWOT Retention Committee, organized in 2009 by the University of North Carolina at Greensboro (UNCG), found much of the same thing. Created to analyze critical factors affecting student retention and success and devise an action plan to increase retention, four-year graduation, and six-year graduation rates, the team extensively analyzed data by student group (Table 8) and identified successful programming inside and outside the university that supported retention and graduation. At the end of the year, the team had identified 12 key factors affecting student retention, not having declared a major by the end of the first year being a critical one.

Regardless of whether the problem is a particular major or the absence of a major, understanding patterns on your campus can be helpful. One suggestion is to run the numbers for all majors, as well as for students who are undeclared during their first (or first two) years. What you discover may help focus your inquiry. Asking, for example, what is happening in majors with the lowest success rates? Table 8 shows how to group that information.

We tend, of course, to think that majors will group here according to perceptions about how "hard" they are. But do they? Not, certainly, at all institutions. This simple analysis

DATA EXAMINED BY UNCG'S SWOT RETENTION TEAM

To better understand factors associated with low first-to-second-year retention and overall graduation rates at University of North Carolina at Greensboro, the Undergraduate Studies SWOT (strengths, weaknesses, opportunities, threats) Retention Committee examined many data points, including:

▸ Retention by ethnicity and gender

▸ Retention by the number of attempted and completed credits

▸ Retention by special populations (e.g. summer launch, honors college, learning communities, special support services, first generation)

▸ Retention rates and unmet financial needs of in-state and out-of-state students

▸ Retention of undeclared freshmen students, the term in which a major was declared, and the impact on the GPA of being undeclared

▸ Average retention and graduation rates from the 2003-2007 cohorts both at UNCG and in the University of North Carolina System

▸ Percent of students who graduated within six years

▸ Reasons for student withdrawals

Table 8				
Majors with High Student Success	**1st to 2nd Year Retention**	**4-year graduation rate**	**5-year graduation rate**	**6-year graduation rate**
Majors with Low Student Success	**1st to 2nd Year Retention**	**4-year graduation rate**	**5-year graduation rate**	**6-year graduation rate**

won't tell you much about why the success patterns differ. But it's a good first step in figuring out where to start digging.

ANALYSIS 8

HOW EFFICIENT ARE WE IN GETTING STUDENTS TO A DEGREE WITHOUT EXCESS CREDITS?
ANALYZING THE DATA ON UNITS COMPLETED

When institutional research shops at many universities run the numbers on units completed by degree recipients, they often are stunned both by how high the averages are and how wide the range. When they dig deeper into the data, they see that some of the problem can be attributed to students changing majors one or more times on their journeys. But sometimes the problem lies with the institution: either with departments, for escalating their requirements for the bachelor's degree beyond what is typical elsewhere, or with the entire institution, for failing to provide students with clear maps toward their degrees.

Regardless, it is important to examine your data and see what the averages look like, as well as the range among different disciplines (Table 9).

To understand the numbers on your campus, it may be important to take a look at actual requirements for degrees in various disciplines. At some institutions, when nobody was looking, requirements inched above the normal, 120 credit-hour mark. In the belief that this practice slows students down without any clear benefit, many institutions are simply capping requirements at no more than 120 credit hours and providing exemptions only with a clear demonstration that the extra coursework is both essential and common practice elsewhere.

Steps like these can help, but they don't do much for students who wander inefficiently through their undergraduate years. Here, the kinds of degree maps produced by institutions like Florida State University, Georgia State University, and a growing number of others can be enormously helpful, as can more aggressive advising and early deadlines for students to declare either a major or at least a disciplinary "meta-major," so building-block coursework can be completed on time.

ANALYSIS 9

WHAT PATHWAYS DO OUR STUDENTS TAKE ON THEIR JOURNEY TO A DEGREE?
AN ANALYSIS OF TRANSCRIPTS

Sometimes there's just no substitute for grabbing a sample of actual student transcripts, rolling up your sleeves, and digging in.

That's exactly what a group of 60 faculty members did at the University of Wisconsin–Eau Claire in an effort to better understand barriers to student progress, as well as what catalyzes it. They analyzed a large sample of transcripts individually to discover patterns and trends in course-taking habits, common bottlenecks, and whether or not students stayed on a particular academic track.

What did they learn? They found that up to one-third of their students were all over the place. When the analysis was restricted to graduating in four years, they learned that half of their students were off their academic paths.

They discussed the findings with both advisers and students, which helped them understand student challenges with course availability, as well as with navigating a difficult, opaque

Table 9			
Major	**Average Credits at the Bachelor's Degree**	**Average for Quartile of Majors with Fewest Credits**	**Average for Quartile of Majors with Most Credits**

general education structure and determining which courses could help them advance toward their educational goals.

This digging process will be very helpful in completing analysis 10 (see below), because participants can tell the campus institutional research office what they saw in the transcript review, essentially "nominating" behaviors and practices for further study.

The following are suggested areas of focus:

- Lags between developmental courses and the credit-bearing courses that should follow them
- Poor performance in key lower division courses required for the major
- Pattern of withdrawing from courses
- Lack of continuous enrollment
- Delays in completing (or even enrolling in) core general education requirements like college English, college math, and foreign language.

When the University of Southern California (USC) impaneled a task force to work on increasing retention and graduation rates, one hot topic of inquiry was the rate at which students completed core requirements for their major and graduation. After a lot of digging, task force members discovered that the failure to complete USC's three-semester foreign language (FLAN) requirement was the largest single factor preventing graduation for many students who were close to earning sufficient credits for a degree. USC's analysis of unsuccessful students revealed that many high credit-earning, non-completers or non-timely completers put off completion of the FLAN into their final semesters.

After examining the FLAN requirement's role in these analyses, the task force asked itself, "What is the right approach to enforce completion of the FLAN requirement without damaging the academic progress of our students in other areas such as general education, other major courses, and possibly minor courses?"

Inspired by Harvard University's policy of placing students on probation if they do not complete the two-semester foreign language requirement before the beginning of the fifth semester, USC chose to implement a similar policy that enforced a timetable for FLAN completion.

The task force collaborated with the policies and procedures committee, as well as the faculty committee, to eventually modify university policy. As of fall 2013, any student admitted as a freshman into a degree program that requires a foreign language or admitted as a freshman with undecided or undeclared status must satisfy the language requirement before the beginning of his or her fifth semester at USC.

Transfer students have a slightly different policy. A student who transfers or makes a change of major into a degree program with a language requirement must satisfy the requirement before the beginning of his or her fourth full semester in the program. Students who do not satisfy the requirement on time will be placed on academic probation and required to enroll in a language course each semester until the requirement has been satisfied. Failure to abide by the terms of probation will result in academic disqualification.

Though only recently implemented, officials hope these approaches will help students better plan their academic pathways and complete their degrees on time.

ANALYSIS 10

HOW DO THE PIECES OF STUDENT SUCCESS — OR FAILURE — FIT TOGETHER?
CONDUCTING A FULLER ANALYSIS OF STUDENT PATHWAYS

Each of the analyses described in this guide are useful for calling attention to student success, and in beginning the broad-based, problem-solving process necessary to turn around success patterns in most institutions. But these simple analyses don't necessarily provide the broader insights that are often necessary to mount an effective change strategy — in part because they don't tell you much about what matters most. That requires looking at how the various factors fit together. And it also requires thinking differently about the data, looking for messages about what the institution can do differently rather than just for more information on problems with students.

The SWOT Retention Committee at UNCG, described earlier, was intended as an institution-wide rethinking of retention and

success efforts. The diverse team united representatives from student achievement, housing and residence life, academic services, orientation and family programs, institutional research, and a variety of academic disciplines.

Meeting twice a month, the SWOT team analyzed micro student group data and identified successful programming that supported retention and graduation. As a result, the team was able to identify the key factors affecting retention that were amenable to university action. (See sidebar on page 8.)

True to its name, the team then elaborated on the strengths, weaknesses, opportunities, and threats (SWOT) related to student retention efforts at UNCG. Armed with insights from data analyses, effective local programs, national best practices, and the SWOT analysis, the team proposed a comprehensive model integrating university programming and services. The goal was to provide customized strategies to address the challenges associated with students who were most at risk of leaving.

A team member recalls the process: "We began to develop tailored, individual strategies for the students most in need, most in peril. We knew, for instance, that those students who were undecided were more at peril than those who came in embracing a major. So, we created an advising task force to investigate ways to help these students explore and declare a major within the first year."

As a result, the university established a Students First Office, a home for these "exploratory" students that provided an exploratory major program, more frequent and targeted advising and mentoring support, and access to the DegreeWorks software program to help students become more intentional about their short and long-term course-taking choices. Preliminary data on the effectiveness of these efforts show they contributed to an increase in retention among undeclared students from 76 percent in 2010-11 to a current 80 percent.

The UNCG team's work had much in common with later efforts at Virginia Commonwealth University (VCU). The team there followed all first-time freshmen enrolled in fall 2007 to the fall 2009 semester to determine the two-year retention rate and factors that influenced retention. They examined demographic elements (race/ethnicity, gender, residency), academic background (SAT score and high school GPA), Pell Grant status, living in university housing, major, and academic performance each term at VCU.

After two years, 72 percent of freshmen at VCU remained enrolled. But underneath that average, the patterns were very different for students with different academic records. Students who were in good academic standing had a two-year retention rate more than twice those not in good academic standing. In fact, first semester performance (GPA) was the single strongest predictor of retention, with second semester performance (GPA) being the second strongest predictor.

To the surprise of the team at VCU, SAT scores were not good predictors of completion — except for students at the high end of the scale.[6] High school GPAs were better predictors, but not

as strong as academic performance during the first year. The finding that academic work (high school and college GPA) was more important than measured academic ability helped inform conversations on whether to raise the minimum SAT score required for admission and other potential "completion management" tactics.

These and many other analyses of campus data were presented to every major authoritative body at the institution, including the president, vice presidents, council of deans, and board members, who eagerly engaged their respective teams to follow up on the findings. They agreed that the key to increasing the graduation rate was to improve academic performance and increase retention in the second and third years.

In pursuit of these goals, VCU sought to strengthen and improve the programs in the University College to prepare first-year students for college-level work. Features include an elaborate summer orientation followed by a mandatory, cohort-based, two semesters-long experience supported by proactive advising, tutoring, and related services. The result?

VCU has seen an increase in first-to-second-year retention rates, peaking at 86 percent in 2012-13, and an increase in good academic standing after the first year from 73 percent to 82 percent.

LOOKING AHEAD

What do student success data management systems look like at the institutions that are furthest along?

Florida State University and Georgia State University have been working on improving student success for longer than most other institutions. Over the years, they have moved from brief, back-of-the-envelope analyses of key data to building very sophisticated systems that continue to deepen their understanding of what matters and that automate many of the basic processes of tracking student progress and triggering immediate human action when students go off track. These systems help enormously in the effort to ensure student success, driving accountability throughout the system but especially in advising.

Florida State University

One of the insights faculty get when they "interrogate" their various sources of data is that the undergraduate experience isn't very coherent for many students — especially those left on their own to choose their way through the curriculum. To attack this problem, FSU created during the 2004-05 school year an academic tracking system, known as Mapping (MAP), embedded in its Student Academic Support System (SASS). Every undergraduate major offered at FSU is presented to students in an eight-term, two-column format that identifies all courses required for successful completion, including graduation requirements and electives, and all milestones that students must complete within the tracking system.

Milestones are conditions, courses, or activities that students must complete at specified points during the degree program. Students learn about MAPs during the admissions process,

orientation, and counseling sessions. Each semester, after the add/drop deadline has passed, "mapping coordinators" receive the following reports to use in advising students:

- Students who have not registered for the milestones in their current term

- Students who have not registered for a current milestone and/or a milestone for the next semester

After grades are posted at the end of the fall and spring semesters, a systems-generated report reviews every student for the following:

- Student information: ID, first name, last name, e-mail address

- Current major and term checked

- Current MAP term against the milestones for all terms up to and including the current term

- A column for each semester that the student has been at the university that indicates whether or not the student has been on or off-track

If a student meets the MAP requirements for the current term, his or her MAP term indicator is advanced by one. If a student fails to meet the MAP requirement and is determined as off-course, the system will place the appropriate MAP stop on the student's registration record and send an alert e-mail. If the student fails to meet the MAP requirement for the first time, he or she is required to meet with an adviser prior to registering for the next term. If this occurs for two consecutive semesters, the student will be required to change majors. As part of a broader effort to identify predictors of success within student programs and help students progress toward timely graduations, students are only allowed to enter a major for which they are on course.

Mapping has extended benefits to both the students and the university. Through this process, students are empowered to monitor their own progress, predict a timely graduation contingent on their academic performance, and choose majors that work best for them. Mapping has enabled advisers to provide more intentional and customized support to prospective and current students.

An FSU website, Academic Program Guide, contains all of the current MAPs for all undergraduate majors offered at FSU. Link: www.academic-guide.fsu.edu/Maps/Mapexploratory.html

Additionally, the University Demand Analysis Numbers Group (comprised of registrar, undergraduate studies, and mapping representatives) uses this data to more accurately predict enrollment and course demand to subsequently revise course offerings to meet the needs of the students.

In terms of impact, fall-to-fall retention of first-time-in-college students continues to improve, six-year graduation rates are slowly climbing, and the four-year graduation rates seem to be positively affected, all because of an integrated suite of institutional efforts.

Georgia State University

In August 2012, Georgia State University launched its Graduation and Progression Success (GPS) Advising, which uses historical data, including seven years of retention, progression, and graduation data (with over two million grades earned by past and present students), to develop more than 700 alerts that indicate behaviors that put a student at risk of not graduating. The value of these alerts lies in their ability to notify the student and the university about actions that could be detrimental to the student's progress and to offer an opportunity to proactively address the action.

Some of the alerts apply generally to all students; others apply to specific disciplines. Sample alerts include the following:

- General alerts:
  - Failure to achieve a minimum grade in a course central to success in a major
  - Failure to complete a course by a particular point in one's academic career
  - Registration for a course that does not apply to a student's program of study
- Discipline-specific alerts:
  - Biology majors need to take BIO 1112 by the time they reach 30 units
  - Nursing students need to earn a B+ in their first math course
  - Accounting students need to earn a B+ in their first math course
- Service-specific alerts:
  - Accounting majors receiving tutoring are asked to take additional math before registering for upper-level accounting courses

Patterns of past students' performance also offer predictive analytics for how each student will fare in every major and most courses offered by the university. But they are not just predictions: The entire system is designed to trigger an institutional response aimed at helping that student succeed. For example, political science majors who get an A or B in POLS 1101 have a 70 percent or greater probability of graduating on time compared with 25 percent for majors who get a C in the same course. This alert now provides a call for action (e.g., assist the student with targeted support, have him/her choose another major) for a behavior that in the past would have been under the radar, particularly as the student still earned a passing grade in the course.
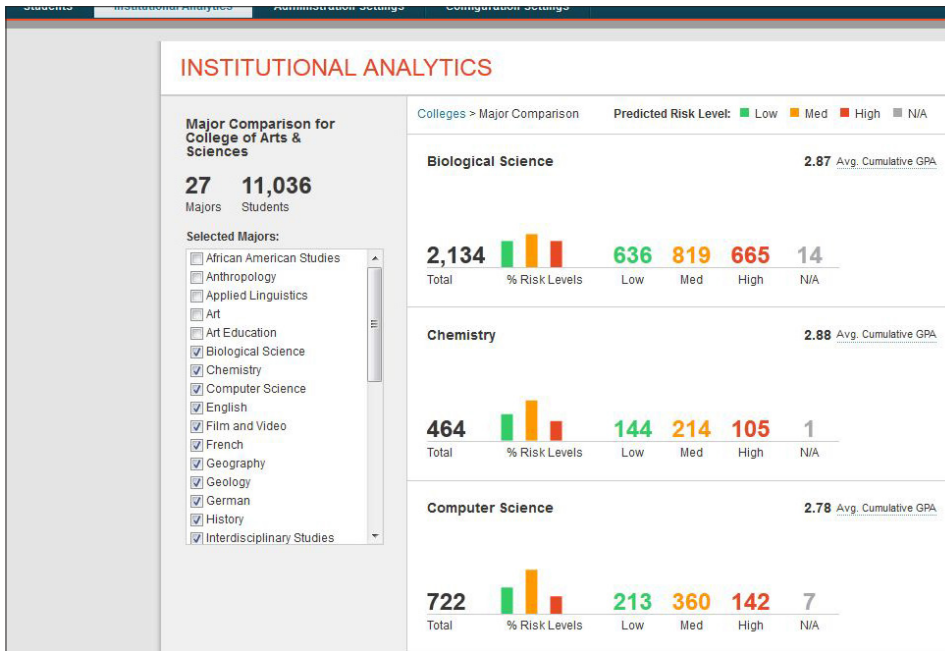
Figure 5
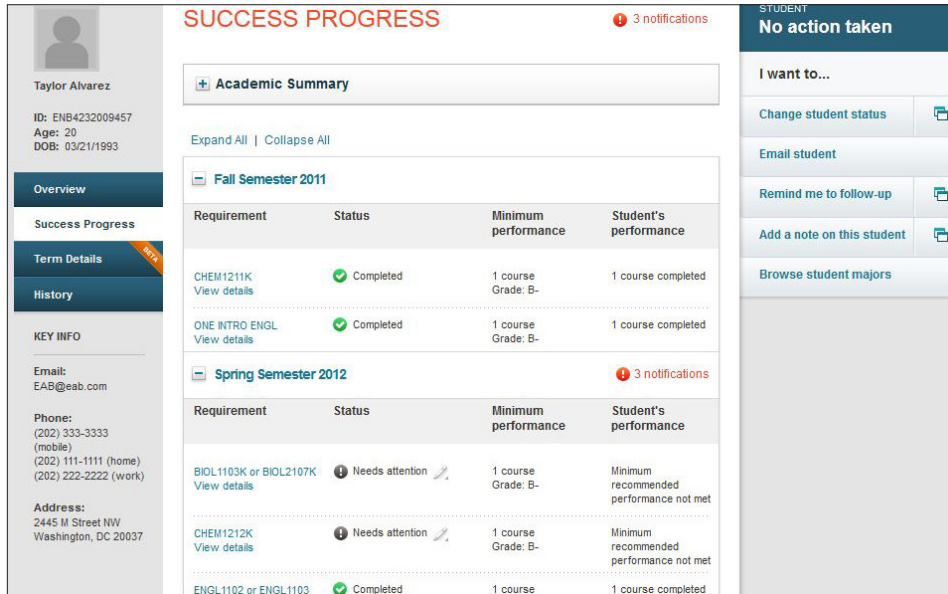
All alerts triggered in one day are automatically sent (Figure 5) to the advisers by the following morning. At that point, the advisers have 24 hours to reach students.

Figure 6
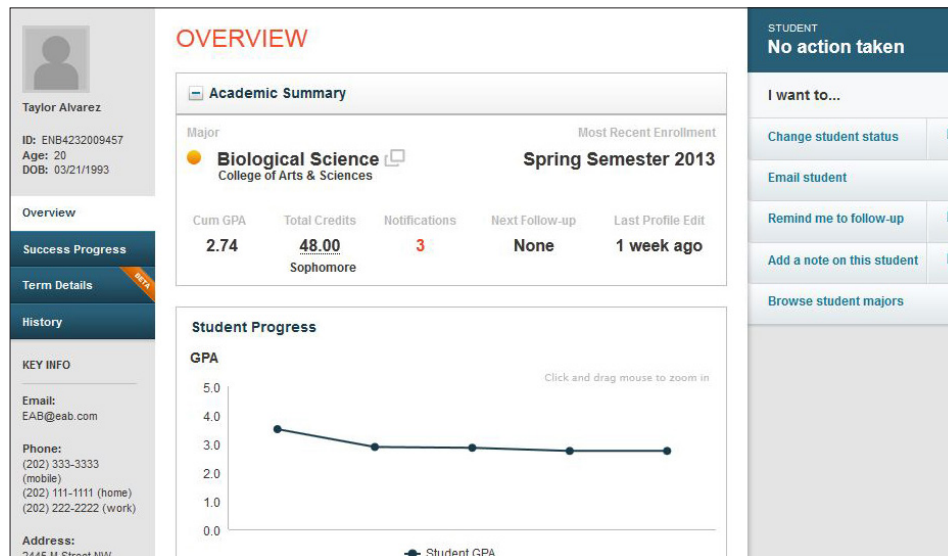
In a single screen (Figure 6), the GPS system captures all critical information about a student's progress including his or her major, GPA, credit hours, holds, alerts, risk factors, remaining courses, previous advising interactions, contact information, and a one-click feature to e-mail the student. In addition to being able to review a student's performance in a holistic manner, advisers also have the ability to generate custom reports in a matter of seconds. Beyond advising, the university tracks analytics by department, college, and university levels.

Figure 7

The GPS system aims to empower students, advisers, and the university (Figures 7 and 8) with data about specific, actionable information on students' status and progress toward a timely graduation without excess credits. Georgia State's emphasis on the value of real-time, systemic, and systematic use of data and analytics carries great potential.

Bearing in mind that any results are a combination of simultaneous university efforts, preliminary results show a graduation rate increase of between 2 and 3 percentage points, as well as the highest number of degrees ever conferred. More specifically, the university's predictive analytics reported that 2 out of 3 sophomores improved their chances for a timely graduation.

Figure 8
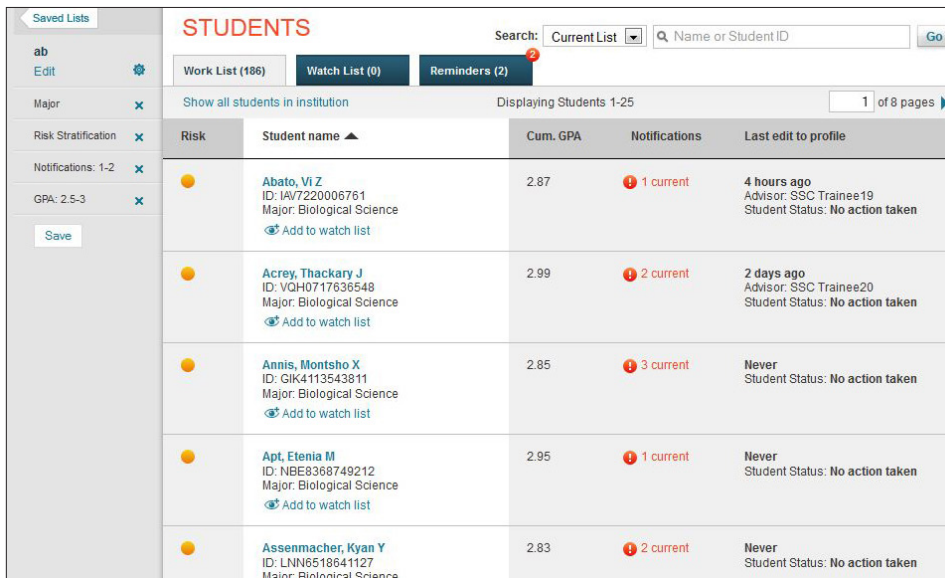
CONCLUSION

We hope these 10 analyses — all drawn from institutions that have gotten some real traction on their own student success problems — expand your institutional toolbox of analyses to improve student success.

Obviously, data alone can't tell you what to do about the problems these analyses point up. Indeed, without the right kind of framing, it is easy for campus teams to see what they have always seen — *students as the problems* — instead of focusing on what the data may suggest about problems with campus policies or practices. Indeed, if anything is clear from the experiences of campuses that are on sustained improvement trajectories, it is that they have made the transition from seeing the demographics of their students as destiny to understanding that colleges really can, through sustained efforts, radically reshape their student success rates without becoming more selective. ■

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NOTES

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6. Jeremy Offenstein, Colleen Moore, and Nancy Shulock. "Advancing by Degrees: A Framework for Increasing College Completion" (Washington, D.C.: The Education Trust, May 2010).

7. See also William Bowen, Matthew Chingos, and Michael McPherson, Crossing the Finish Line: Completing College at America's Public Universities (Princeton, N.J.: Princeton University Press, 2009).

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The Education Trust promotes high academic achievement for all students at all levels — pre-kindergarten through college. We work alongside parents, educators, and community and business leaders across the country in transforming schools and colleges into institutions that serve all students well. Lessons learned in these efforts, together with unflinching data analyses, shape our state and national policy agendas. Our goal is to close the gaps in opportunity and achievement that consign far too many young people — especially those who are black, Latino, American Indian, or from low-income families — to lives on the margins of the American mainstream.

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