BEST PRACTICES IN HIGHER EDUCATION RETENTION STRATEGIES

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In the following report, Hanover Research discusses high-impact practices that institutions of higher education can employ to help boost student retention rates. This report explores both institutional strategies and student support structures that can help augment the likelihood of student persistence, and profiles institutions that have established innovative initiatives.

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INTRODUCTION

The U.S. higher education graduation rate is just above 50 percent, approximately the same rate as seen over much of the past century.[1] Yet, improving graduation rates has just recently become a national priority, linked to efforts to expand the number of American workers with postsecondary educational attainment. In 2011, the Obama Administration organized the National Commission on Higher Education, a task force of college and university presidents to discuss best practices in student retention. The government also called on universities across the United States to submit their most successful strategies to the U.S. Department of Education.[2]

Higher education institutions, faced with declining enrollments and mounting financial pressures, are likewise prioritizing retention and implementing targeted interventions to address this issue; for example, 92 percent of university chief business officers cite "retaining current students" as a top priority.[3]

To this end, the following report investigates high-impact practices to improve student persistence rates in higher education. It is intended to provide institutions of higher education with effective strategies for boosting their retention rates. The report comprises two sections:

- **Section I: Policies and Strategies to Increase Student Retention** explores best practices in increasing student retention. This section examines these policies and practices from two main perspectives: institutional strategies and student support structures.
- **Section II: Profiles of Innovative Institutions** presents in-depth profiles of five institutions with high-impact retention programs, including several identified through the U.S. Department of Education.

[1] Demetriou. C., and Sciborski, A. "Integration, Motivation, Strengths and Optimism: Retention Theories Past, Present, and Future." The University of North Carolina at Chapel Hill. 2013. p.1. https://studentsuccess.unc.edu/files/2012/11/Demetriou-and-Schmitz-Sciborski.pdf

[2] "An Open Letter to College and University Leaders: College Completion Must Be Our Priority." American Council on Education. January 2013. p7. http://www.acenet.edu/news-room/Documents/An-Open-Letter-to-College-and-University-Leaders.pdf

[3] "The Retention Agenda." *Inside Higher Education.* July 23, 2013. https://www.insidehighered.com/sites/default/server_files/files/RetentionAgendaPDF(1).pdf

KEY FINDINGS

- **Successful institutions typically emphasize multi-departmental collaboration and a holistic approach to student retention and graduation.** Institutional leaders emphasize that there is no "silver bullet" to solve student retention. Rather, success comes from building a culture of retention in which supporting student success permeates all corners of the university.
- **Effective strategies that increase retention address both academic and social engagement.** Rather than focus on just one strategy, successful institutions often take a comprehensive approach to retention, in which they combine complementary strategies to increase retention and graduation rates.
- **Disaggregating and analyzing student data is often a first step in understanding retention challenges and design a targeted campus-wide retention strategy.** Data are useful for identifying who should receive targeted support. For instance, a university may target advising services to student populations identified as at-risk of attrition or introduce supplementary instruction in courses with high drop-out rates.
- **Data are unclear about the statistically calculable effects of financial aid on student retention, but institutional leaders recognize its importance and value.** To increase aid's effectiveness, institutions should:
  - Ensure eligible students understand and apply for financial aid, simplifying the process where possible.
  - Target financial aid to students with the largest unmet needs.
  - Tie funding to academic progress, such as GPA and credits completed during the first term, through the use of performance-based scholarships.
  - Provide additional support services, such as academic and financial advising, to students receiving institutional financial aid.
- **Programs specifically designed for first-year students are critical components of strong retention strategies.** Officials from private, four-year institutions rate programs for first-year students—such as orientations, mentorships, and first-year experience programs—to be among the most effective methods of improving retention. In a 2015 survey, approximately 48 percent of administrators at such institutions considered these programs to be "very effective," while another 44 percent considered them "somewhat effective."
- **Institutions that rely exclusively on a single measure to identify students' remedial needs, typically a screening test, may misplace students academically.** Research studies find that incorporating multiple measures, including a high school performance indicator such as GPA, more accurately predicts students' college readiness. However, there is no shared consensus among higher education experts regarding the benchmark cut-off scores that indicate college readiness. The College Board and the ACT recommend certain benchmark minimums; however, these organizations encourage institutions to determine their own context-specific cut-off scores, resulting in a wide range of remedial benchmarks across higher education.

- **Minority students and student athletes can benefit from additional and targeted support to help promote retention.** For example, African-American students in many applied majors often drop out at higher rates than their peers in other majors, and institutions can specifically monitor minority students in high-failure disciplines to ensure success. Similarly, student athletes may need additional academic support at the onset to help them balance sport and school demands.

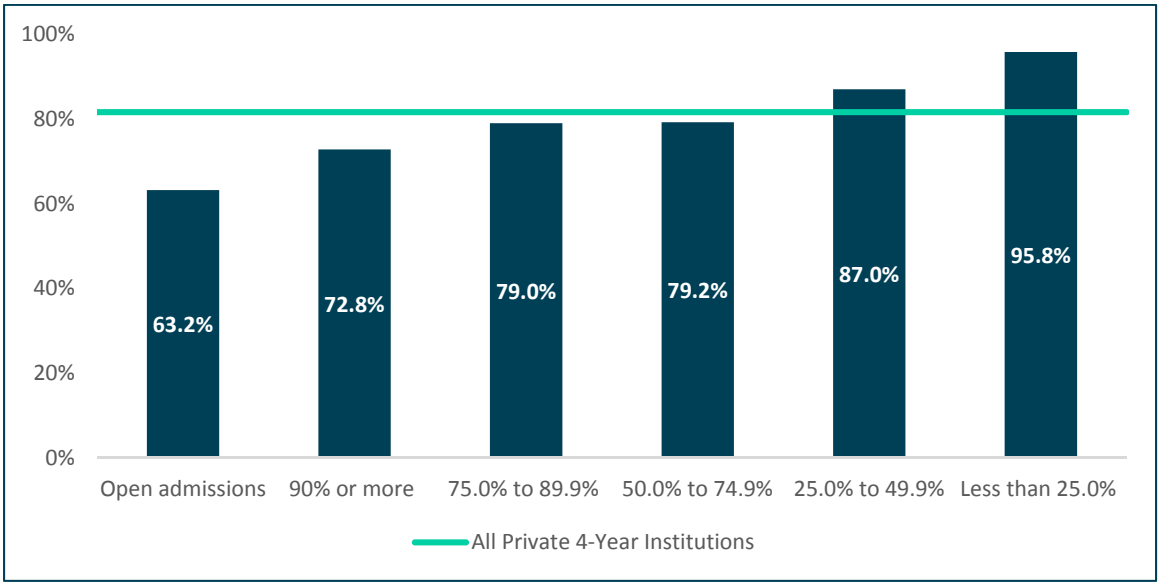
SECTION I: POLICIES AND STRATEGIES TO INCREASE STUDENT RETENTION

In this section, Hanover Research explores effective practices and strategies for increasing student retention rates at institutions of higher education. This section mainly considers the two primary areas of retention best practices, which approach student persistence through either institutional strategies or student services. It also examines effective supports for targeted student groups, namely minority students and student athletes.

STUDENT PERSISTENCE IN HIGHER EDUCATION

According to the National Center for Education Statistics (NCES), four-year institutions of higher education retained just over 80 percent of first-time, full-time undergraduate students between 2014 and 2015, with similar persistence rates among all private universities (Figure 1.1). However, retention rates varied based on an institution's selectivity; indeed, the retention rates at the most selective private institutions (those that accept less than 25 percent of applicants) were nearly 33 percentage points higher than those at institutions with open enrollment policies.[4] Thus, colleges and universities that adopt more selective acceptance policies typically experience less student attrition from year to year.

Figure 1.1: Retention Rates of First-Time Undergraduates at Private Four-Year Institutions by Level of Selectivity, 2014-2015



Source: National Center for Education Statistics[5]

[4] "Retention of First-Time Degree-Seeking Undergraduates at Degree-Granting Postsecondary Institutions: 2006 to 2015." National Center for Education Statistics, October 2016. https://nces.ed.gov/programs/digest/d16/tables/dt16_326.30.asp

[5] Adapted from: Ibid.

While the level of student preparation among students attending more selective institutions is often attributed to the higher retention rates at those universities, many other factors can equally influence a student's likelihood of persisting in higher education. Much of the research on the various causes of attrition draws from a model created by education researcher Vincent Tinto in the 1970s.[6] This model, which is still cited as the seminal framework for understanding retention and attrition in higher education, views academic performance as just one determinant of student persistence, with social integration playing a vital role as well:

> From Tinto's model, dropout is viewed as the result of two major failures: lack of integration into the social life of the institution and/or insufficient compatibility with the academic demands. Thus, dropout is more likely to occur among students who fail to establish membership in the college's social community or who fall short with the prevailing values and intellectual norms of the college.[7]

The interaction between academic and social factors in encouraging student retention in higher education indicates that institutions can most effectively impact persistence rates through a holistic examination of student experiences. To this end, student retention practices are predominately divided into two categories: **institutional strategies** (i.e., internal operations undertaken by the institution that can be applied across the student body) and **student services** (i.e., programs that target individuals or select groups and often rely on student participation or opt-in). The remainder of this section reviews best practices in retention according to these two themes.

INSTITUTIONAL STRATEGIES

In 2015, higher education consulting firm Noel-Levitz released the most recent results from a biannual survey of officials from nearly 200 four-year private universities to measure the usage and perceived effectiveness of common strategies designed to boost undergraduate retention rates.[8] Figure 1.2 presents the 10 retention strategies that university leaders most commonly identified as effective in bolstering student persistence. The strategies found to be most effective (ranked by the percentage of four-year private institutions rating the practice as "very effective") include:

[6] See: Tinto, V. "Leaving College: Rethinking the Causes and Cures of Student Attrition." University of Chicago Press. March 1987. http://eric.ed.gov/?id=ED283416

[7] Gentry, R. "Sustaining College Students' Persistence and Achievement through Exemplary Instructional Strategies." *Research in Higher Education*, 24, August 2014. p.2. http://www.aabri.com/manuscripts/141918.pdf

[8] Accessed from: "2015 Student Retention and College Completion Practices Report." Noel-Levitz, 2015. https://www.ruffalonl.com/papers-research-higher-education-fundraising/2015/2015-student-retention-and-college-completion-practices-benchmark-report-for-four-year-and-two-year-institutions

- Institution-wide emphasis on the teaching of undergraduates and undergraduate learning;
- Tracking persistence and progression patterns, term by term, for all students who matriculate; and
- Identifying courses that are more difficult or less difficult to complete.[9]

Notably, emphasizing undergraduate teaching and tracking persistence patterns by term are strategies used by nearly all of the surveyed institutions. More than 80 percent of respondents indicated that these strategies are at least "somewhat effective" at fostering improved retention. In addition, using student satisfaction assessment data and tracking retention rates for specific programs was rated as at least "somewhat effective" by the preponderance of institutions and are done by an equal proportion of respondents (i.e., over 80 percent). Assessing current students' satisfaction and success levels is another practice that is commonly used and generally viewed as effective.

Figure 1.2: Most Effective Internal Operations Strategies for Increasing Retention at Four-Year, Private Institutions, 2015

Retention Strategy	Effectiveness Rating			Using Method
	Very Effective	Somewhat Effective	Minimally Effective	
Institution-wide emphasis on the teaching of undergraduates and undergraduate learning	51.5%	37.9%	10.6%	83.5%
Tracking persistence and progression patterns, term by term, for all students who matriculate	43.9%	42.4%	13.6%	83.5%
Identifying courses that are more difficult or less difficult to complete	40.4%	40.4%	19.3%	72.2%
Using student satisfaction assessment data to make changes to address attrition	37.1%	47.1%	15.7%	88.6%
Assessing what is important to your currently enrolled students to help ensure their satisfaction and success	33.3%	49.2%	17.5%	79.7%
Setting measurable goals to improve the retention rate from term-to-term or year-to-year	32.3%	38.7%	29.0%	78.5%
Tracking retention rates for specific academic programs	31.3%	47.8%	20.9%	84.8%
Using a Learning Management System to monitor academic progress and identify at-risk students	30.2%	41.9%	27.9%	54.4%
Statistical modeling to predict the likelihood of an incoming student persisting to degree completion	29.2%	41.7%	29.2%	60.8%
Title III or Title V funding	28.9%	31.6%	39.5%	48.1%

Source: Noel-Levitz[10]

[9] Bullet points adapted from: Ibid., p.13.
[10] Adapted from: Ibid.

Of note, the perceived effectiveness of financial aid and scholarships to increase student persistence rates was mixed, suggesting that monetary incentives alone may not be a driving factor behind retention (Figure 1.3). Although the preponderance of surveyed private institutions indicated that they used financial aid or scholarship support as a strategy to promote retention (72.2 percent), only 22.8 percent viewed this as a "very effective" strategy, while 50.9 percent viewed it as "somewhat effective" and 26.3 percent as "minimally effective."[11] Even fewer colleges and universities reported using financial incentives to motivate faculty members to encourage student persistence.

Figure 1.3: Financial Incentives for Increasing Student Retention at Four-Year, Private Institutions, 2015

Retention Strategy	Effectiveness Rating			Using Method
	Very Effective	Somewhat Effective	Minimally Effective	
Financial aid and scholarships aimed at retention	22.8%	50.9%	26.3%	72.2%
Financial incentives for faculty and staff tied to retention increases	N/A	N/A	N/A	7.6%

Source: Noel-Levitz[12]

In order to more fully assess these findings, Hanover Research conducted a review of the recent scholarly literature on student retention from an institutional perspective. The following subsections discuss a number of institutional strategies that are regularly cited as effective in fostering student persistence in higher education.

Monitoring Student Persistence Data

The National Commission on Higher Education Attainment (NCHEA) suggests "better data collection and analysis" as one key strategy that institutions should employ to increase degree completion rates.[13] Specifically, the NCHEA encourages colleges and universities to use data to:

- Pinpoint student weaknesses in preparation prior to attending college;
- Identify at-risk students; and
- Communicate with students about progress to graduation.[14]

The Commission stresses that strategically disseminated information can be useful to motivate faculty and campus leaders to make retention a high institutional priority. **Data are particularly useful for highlighting attrition or failure trends within individual courses.**

[11] Ibid., p.10.
[12] Adapted from: Ibid., p.10, 14.
[13] "An Open Letter to College and University Leaders: College Completion Must Be Our Priority." National Commission on Higher Education Attainment, January 2013. p.7. http://www.acenet.edu/news-room/Documents/An-Open-Letter-to-College-and-University-Leaders.pdf
[14] Bullet points adapted from: Ibid., pp.21–22.

For instance, after the University of Alabama published success rates for its introductory-level courses with the largest enrollment sizes, most faculty were surprised to discover the high numbers of failing students. This helped to incentivize university administrators to redesign early credit-bearing math courses (e.g., algebra) which over half of enrolled students failed.[15]

Some universities also use data to communicate with students or former students about their progress to graduation and major requirements. This involves closely monitoring student progress to alert both students and their advisors when key checkpoints are reached, or conversely, not reached within a given or appropriate timeframe. Walla Walla Community College, for example, created a "Degree Estimator" tool that notifies students when they are close to earning a credential, even if they are no longer enrolled. The institution then offers a small incentive to such students to meet with a counselor and discuss how to stay on track or get back on track to complete the course.[16]

Similarly, the Institute for Higher Education Leadership and Policy recommends that colleges and universities monitor both *milestones* (i.e., measurable academic checkpoints that students must complete to graduate) and *on-track indicators* (i.e., enrollment and academic behavior patterns that research has shown to increase a student's chances of graduating).[17] Combined, these two measures can form a powerful early-warning system for individual students and can also help to identify general patterns in attrition across cohorts.

Using data collected through these methods, colleges and universities can encourage students to enroll full-time, begin remedial or early college-level coursework, and complete 20 to 30 credit hours during their first year, depending on where they fall based on the institution's needs assessment. Figure 1.4 presents a framework of milestones and corresponding on-track indicators that higher education institutions can use in monitoring student progress and retention.

[15] Yeado, J. et al. "Higher Education Practice Guide: Learning From High-Performing and Fast-Gaining Institutions." The Education Trust, January 2014. p.2, 6. https://edtrust.org/resource/education-trust-higher-education-practice-guide-learning-from-high-performing-and-fast-gaining-institutions/

[16] "An Open Letter to College and University Leaders," Op. cit., p.22.

[17] Offenstein, J., C. Moore, and N. Shulock. "Advancing by Degrees: A Framework for Increasing College Completion." Institute for Higher Education Leadership and Policy; and the Education Trust, April 2010. pp.2–3. http://files.eric.ed.gov/fulltext/ED511863.pdf

Figure 1.4: Framework of Milestones and On-Track Indicators to Track Student Progress

MILESTONES	ON-TRACK INDICATORS
▪ Return for subsequent terms (retention) ▪ Complete needed remediation ▪ Begin college-level coursework in math and English ▪ Earn one year of college-level credits ▪ Complete general education coursework ▪ Complete a community college transfer curriculum ▪ Transfer from community college to a university ▪ Complete a certificate or degree	**Remediation** ▪ Begin remedial coursework in the first term, if needed **Gateway Courses** ▪ Complete college-level math and/or English in the first or second year ▪ Complete a college-success course or other first-year experience program **Credit Accumulation/Academic Behaviors** ▪ Complete high percentage of courses attempted (low rate of course-dropping or failure) ▪ Complete 20 to 30 credits in the first year ▪ Earn summer credits ▪ Enroll full time and continuously, without stop-outs ▪ Register on-time for courses ▪ Maintain adequate GPA

Source: Institute for Higher Education Leadership and the Education Trust[18]

The Education Trust produced a list of some of the most useful types of data analyses implemented by public universities that have significantly improved and sustained their graduation rates (Figure 1.5). By measuring retention rates across different dimensions (e.g., by year, by course, and/or by discipline), an institution is better able to pinpoint where exactly students are struggling and how to respond with more targeted interventions to prevent attrition.

Figure 1.5: Types of Analyses of Student Persistence Data

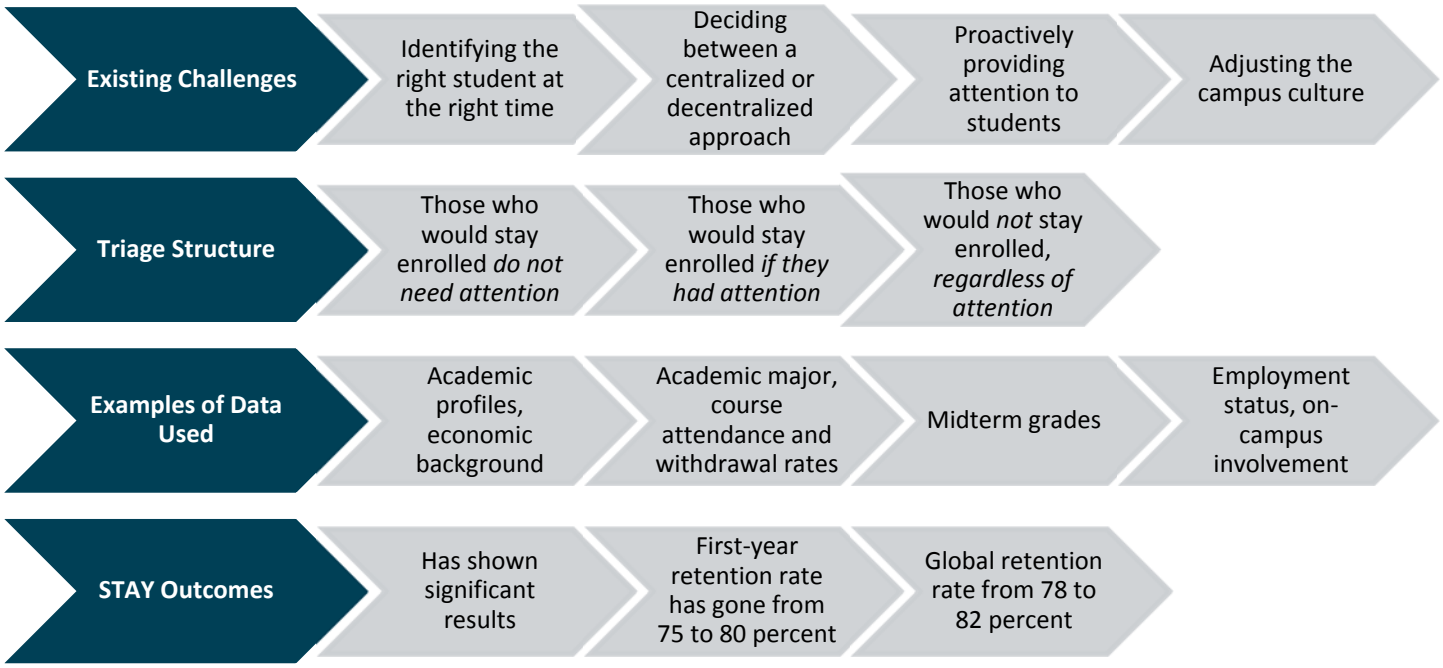
DATA SOURCE	KEY QUESTION(S)
Year-to-Year Retention Rates	How many students do we lose along the way?
Second-Year Students Who Achieve Sophomore Standing	But have those returning students completed enough credits to be called sophomores?
Course Withdrawal Rates	Why are out students not accumulating the credits they need to be on track?
Success Rates in the 25 to 35 Courses with the Largest Annual Enrollment	What are some of the other reasons students are not accumulating the credits they need?
Success Rates in the First Credit-Bearing Math Courses	Who is struggling with math – only developmental students?
Success Rates in Developmental Courses, Particularly Math	How many students who need remediation succeed at our institution?
Attrition Rates for Students in Different Fields	What is the role of the major—or lack thereof—in student success?
Units Completed	How efficient are we in getting students to a degree without excess credits?

Source: The Education Trust[19]

[18] Adapted from: Ibid., p.3.
[19] Adapted from: Yeado et al., Op. cit.,

An example of how data can be used to design more effective retention programs is the STAY program at Carroll University in Wisconsin. Campus leaders developed the successful model to "make retention a day-to-day priority and [create] a campus-wide culture of student success."[20] The STAY program—meaning the combination of the right *students* at the right *time* with the right *attention* will generate the right *yield*—outlines a framework for institutional leaders to identify students with the greatest impact potential (Figure 1.6). The final product is a "robust system" that generates daily reports of students who are in very critical, somewhat troubling, or satisfactory positions. Since implementing STAY, first-year retention at Carroll University has increased from 75 percent to 80 percent.

Figure 1.6: Overview of Carroll University's STAY Program



Source: Carroll University[21]

Accountability and Coordination of Retention Efforts

Research has shown that ownership matters when implementing retention policies and/or programs. Given that a wide range of factors contribute to attrition, institutions that have successfully increased their graduate rates often take holistic approaches to the issues. This involves coordinating strategies across multiple departments and areas of university life, which makes clear assignment of responsibility and leadership vital.[22]

[20] "Making Retention and Student Success Part of Your Campus Culture." *University Business*, September 2012. http://www.universitybusiness.com/article/making-retention-and-student-success-part-your-campus-culture
[21] Adapted from: Ibid.
[22] "An Open Letter to College and University Leaders," Op. cit., p.10.

Exemplar institutions in this regard have appointed senior-level officers to take charge of developing and instituting retention strategies. For instance, Quinnipiac University in Connecticut assigned an associate vice president to coordinate effective responses to students identified as academically at risk of attrition or failure. Likewise, the University of Southern California was able to increase retention among its engineering student body by hiring a full-time retention coordinator. The University further noted the benefit of assigning departmental administrators to serve on an institution-wide student persistence task force (e.g., "University Retention Task Force").[23]

However, colleges and universities should be aware of the potential risk of assigning a single individual or body to oversee all retention strategies; indeed, other officials within the institution may begin to consider student persistence issues to be outside of their concern. Thus, it is important to involve all stakeholders from multiple areas of campus life, particularly faculty, in high-level strategic planning and implementation. For example, the former President of San Diego State University in California was able to raise the institution's graduation rate by 17 percent after launching a year-long discussion that led to projects administered by faculty members, administrators, and community group members. The University of North Carolina at Greensboro similarly organized a Retention Committee made up of faculty members from a range of departments to support the Dean of Undergraduate Studies in analyzing student retention data and revising broader retention strategies.[24]

INCREASING EARLY CREDIT ACCUMULATION

Students who fail to complete the required number of college-level credit hours during their first year (typically assumed to be between 20 and 30 credits) are significantly less likely to be retained through graduation.[25] Requiring students to declare a major by the end of the first year and giving them the opportunity to earn additional credits during a summer term, for instance, can help increase persistence rates.[26] Creating disincentives for students to drop a course of register late (e.g., charging a late sign-up fee) and making it easier for students to enroll full time (e.g., through financial aid or other incentives) can likewise increase early credit accumulation, and hence retention.

Student support services, particularly during the first year—such as early advising and college success courses—may also play a role in increasing credit accumulation.[27] Figure 1.7

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[23] Yoder, B.L. "Going the Distance: Best Practices and Strategies for Retaining Engineering, Engineering Technology, and Computing Students." American Society for Engineering Education, 2012. p.24. http://www.asee.org/retention-project/best-practices-and-strategies/ASEE-Student-Retention-Project.pdf

[24] Yeado et al., Op. cit., p.8.

[25] Offenstein, Moore, and Shulock, Op. cit., p.7.

[26] [1] McCormick, A.C. and C.D. Carroll. "Credit Production and Progress Toward the Bachelor's Degree: An Analysis of Postsecondary Transcripts for Beginning Students at 4-Year Institutions." National Center for Education Statistics, February 1999. http://nces.ed.gov/pubs99/1999179.pdf

[2] Offenstein, Moore, and Shulock, Op. cit., p.8.

[3] Yeado et al., Op. cit., p.8.

[27] Offenstein, Moore, and Shulock, Op. cit., p.14.

details specific strategies that colleges and universities may adopt to increase the number of students attempting and completing the required number of credits during their first year.

Figure 1.7: Strategies to Increase Early Credit Accumulation

Problem	Potential Solutions
Low percentages of students reach a threshold of credit accumulation in their first year (20 to 30 semester credits)	▪ Increase use of college success courses, early advising, and similar programs ▪ Improve financial aid counseling to emphasize benefits of full-time enrollment ▪ Charge lower per-credit fees for enrolling with a full-time credit load ▪ Encourage full-time attendance by providing financial aid and other incentives ▪ Provide financial aid for enrollment in summer terms ▪ For four-year students, facilitate summer enrollment in community colleges "back home" ▪ Offer online summer courses ▪ Require enrollment in at least one summer term
Low credit completion ratio in first year	▪ Use "early alert" systems and improved tutoring services to provide more academic assistance ▪ Limit course drops and repeats or impose extra fees for course withdrawal past a certain date or for repeating a course
High percentage of course enrollments for which students register late	▪ Limit late registration or impose an extra fee for registering late ▪ Use success courses to teach students effective enrollment patterns

Source: Institute for Higher Education Leadership and Policy and the Education Trust[28]

Redesigning Gateway Courses with High Failure or Withdrawal Rates

Another common reason that students may fail to complete the required number of credit hours during their first year in higher education can be attributed to either failing or withdrawing from a class. According to data from the National Center for Academic Transformation, the 25 to 35 courses with the largest enrollments at a college or university usually constitute at least one-third of total enrollments in any academic year, and an even larger portion of course failures.[29] These courses are often introductory (i.e., "gateway" courses) that students must complete as part of the university's graduation requirements or as prerequisites within their major. Remedial courses, particularly in math, also see high levels of failure and/or withdrawal.[30] These courses thus represent important barriers to retention by limiting the number of credits that students can earn early in their college careers.

[28] Adapted from: Ibid., p.14.
[29] Yeado et al., Op. cit., p.5.
[30] Offenstein, Moore, and Shulock, Op. cit., p.2.

Generally, multiple faculty members, without much high-level coordination, instruct introductory or remedial courses. **The first step is to identify the most problematic courses using data, and then introduce targeted course-wide strategies to increase pass rates.** One particularly effective strategy is to place the best faculty in target classes.

For example, the University of Maryland's Clark School of Engineering was able to raise its first-year retention rate by 8 percent and its four-year graduation rate by 9 percent after introducing its "Keystone Program" in 2006. The program incentivizes high-performing professors to teach fundamental first- and second-year pre-requisite courses by offering a 2-percent base salary increase, additional classroom support, and supplemental funds to support their teaching. Keystone Professors are responsible for teaching one section of an introductory course every semester, and Each Keystone Course is assigned a course leader who ensures that students are learning the same concepts in every section.[31]

Other effective practices for increasing pass rates in courses with traditionally high failure or withdrawal rates include:

- Requiring students taking remedial level coursework to enroll in short modules, refresher courses, or supplemental instruction to accompany their classes.[32]
- Re-designing curricula to incorporate more individualized instruction through smaller discussion sections, tutoring, etc. An example that has significantly increased success rates for introductory mathematics courses at the University of Alabama and Virginia Tech is the "Math Emporium," which replaces traditional classroom instruction with blended learning and individualized feedback.[33]

FINANCIAL AID

One Stanford University study found that **a $1,000 increase in financial aid for needy students on average leads to a 2- to 4-percent increase in student retention**. However, this "marginal" increase in retention might not be large enough to justify increasing aid to all students. The author concludes that higher education institutions "either need to identify more cost-effective forms of financial aid or find ways to target aid programs more effectively."[34] Three cost-effective ways that researchers have identified for increasing retention though financial aid are discussed below.

[31] Yoder, Op. cit., pp.22–23.
[32] "An Open Letter to College and University Leaders," Op. cit., p.20.
[33] Yeado et al., Op. cit., p.6.
[34] Bettinger, E. "Financial Aid: A Blunt Instrument for Increasing Degree Attainment," Prepared for the American Enterprise Institute Conference, "Degrees of Difficulty: Can American Higher Education Retain Its Edge?" (2011), in Crocket, K., M. Heffron, and M. Schneider. "Targeting Financial Aid to Improve Retention Outcomes." Noel-Levitz and American Institutes for Research, 2011. p.2. http://www.air.org/sites/default/files/downloads/report/LA_PELL_STUDY_report_1011_0.pdf

Simplifying the Financial Aid Application Process

A 2011 study of first-year community college students found that filing a Free Application for Federal Student Aid (FAFSA) form correlated with higher rates of persistence to the second year of college.[35] Given that a large number of students who would otherwise qualify for federal financial aid fail to even apply, ensuring eligible students understand and apply for financial aid could serve as a low-cost retention strategy. The Education Trust recommends that higher education institutions "educate students about financial aid options and tools at their disposal," "send out reminders about FAFSA deadlines," and "advise students who are struggling to fill out their FAFSA forms."[36]

Studies have also found that the financial aid programs that tend to have the greatest impacts on college enrollment have fairly simple application processes. Universities can simplify the aid application process for students by eliminating supplementary financial aid forms where possible and using a standardized process for students applying for institutional grants and scholarships.[37]

Targeting Financial Aid to Students with the Largest Unmet Needs

According to the Advisory Committee on Student Financial Assistance (ACSFA), "differences in bachelor's degree completion rates by family income suggest that finances are a major factor in persistence at both four-year and two-year colleges."[38] This is in part due to the fact that the net price (tuition less total grant aid) of attending a four-year public university has increased over the past two decades. Research from the ACSFA finds that the net price of attending a four-year public university, as a percentage of family income, increased from 41 percent in 1992 to 46 percent in 2004 for low-income students and from 22 percent to 25 percent for moderate-income students.[39] Moreover, the maximum Pell grant covered 77 percent of the cost of attending a public four-year university 30 years ago; now, it covers approximately 34 percent of that cost. Thus, inadequate financial aid can serve as a serious barrier to college completion for students, particularly those from low income families.

Recent research suggests that **increasing financial aid to students at the bottom half of the income distribution scale has a larger impact on retention than increasing financial aid to upper-class students**.[40] One study assessing the effects of Pell grant awards on student persistence found that "low- and middle-income students gain immensely from receiving

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[35] Lyle, McKinney and H. Novak. "The Relationship Between FAFSA Filing and Persistence Among First-Year Community College Students." *Community College Review,* January 2013. pp. 63-85. http://search.proquest.com/docview/1319492760/fulltext/99C797AC96FD49EBPQ/1?accountid=132487

[36] Lynch, M., J. Engle, and J. Cruz. "Lifting the Fog on Inequitable Financial Aid Policies." The Education Trust, November 2011. p.7. http://edtrust.org/wp-content/uploads/2013/10/Lifting-the-Fog-FINAL.pdf

[37] Ibid.

[38] "Access Matters: Meeting the Nation's College Completion Goals Requires Large increases in Need-Based Grant Aid." Advisory Committee on Student Financial Assistance, Spring 2013. p.21. http://files.eric.ed.gov/fulltext/ED553377.pdf

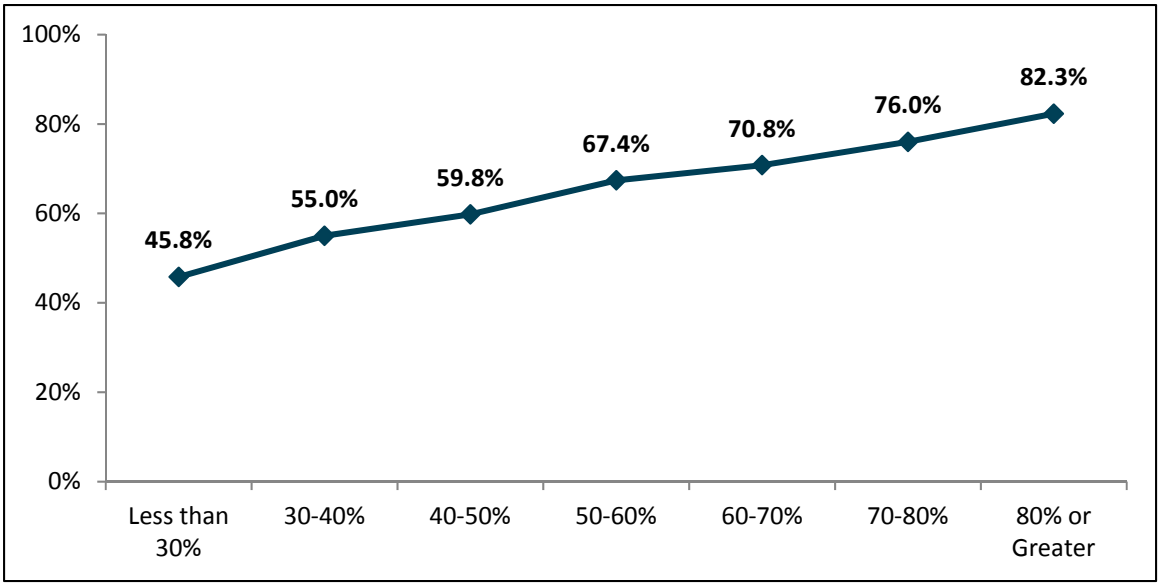
[39] Ibid., p.17.

[40] Lynch, Engle, and Cruz, Op. cit., p.7.

need-based grants, while upper-class students do not need aid in order to stay in college."[41] Another study that measured the effect of financial aid among Pell Grant recipients attending public universities in Louisiana found that increasing grant aid raised fall-to-fall retention rates among in-state, full-time students from all GPA bands. However, increasing financial aid to students with greater unmet financial needs boosted retention the most.[42]

The researchers calculated each student's financial need by subtracting the student's expected family contribution from the cost of attending the University. The percent of need met with gift aid – defined for this study as grants and scholarships that do not need to be repaid – was then calculated based on the amount of financial aid the student received. Figure 1.8 shows how students with a larger percentage of their financial needs met have higher retention rates. The chart shows that retention gains are greatest for increasing aid to students with the highest unmet financial needs. Conversely, the study found "the positive impact of increasing the percentage of need met with gift aid declines substantially once 55 to 60 percent of a student's need is met."[43]

Figure 1.8: Fall-to-Fall, Same-School Retention by Percentage of Need Met with Gift Aid



Source: Noel-Levitz and American Institutes for Research[44]

Tying Financial Aid to Academic Progress and Student Supports

Several studies have found that tying financial aid to academic progress, such as GPA and credits completed, has a more positive effect on retention than purely need-based aid. By making aid contingent on the academic milestones and on-track indicators known to impact

[41] Alon, S. "The Heterogeneous Effect of Need-Based Grants on Students' College Persistence." *Social Science* Quarterly, 92:3, September 2011. http://people.socsci.tau.ac.il/mu/salon/files/2011/11/ssq_sep2011_final.pdf
[42] Crocket, Heffron, and Schneider, Op. cit.
[43] Ibid., p.6.
[44] Figure reproduced from: "Table 4: Fall-to-Fall, Same-School Retention by Percentage of Need Met with Gift Aid." In Crocket, Heffron, and Schneider, Op. cit., p.6.

retention, performance-based scholarships can increase both academic performance and time to degree completions.[45]

Preliminary findings from the social policy research organization MDRC suggest that providing scholarships to low-income students contingent upon meeting certain academic benchmarks increases the number of credits students earn during the first year of college. At certain institutions, performance-based scholarships have also positively impacted retention and graduation rates.[46] In the study, though eligibility criteria varied from site to site, all scholarship recipients were identified as "at-risk" of attrition due to either financial need and/or academic background and were required to maintain a "C" average or better in at least six credits.[47] The MDRC notes several lessons from the study that might be relevant to university-based financial aid and scholarship policies, shown in Figure 1.9.

Figure 1.9: Designing Effective Financial Aid Policies, Lessons from Performance-Based Scholarships

- **Performance-based scholarships are paid directly to students**. This creates a potentially powerful tool to signal to students what is expected of them in terms of enrollment (e.g., full-time versus part-time) and academic performance, and means that this scholarship is potentially more salient to students versus other forms of aid that are paid directly to the students' institutions.
- **Performance-based scholarships create an opening for more constant communication with students.** In this way, an aspect of student support is built into financial aid. Indeed, colleges that incorporate student services with the scholarship (such as academic and financial advising) have seen bigger impacts than those that do not.
- **Performance-based scholarships are generally paid in increments over the semester**. This means that students get their aid over the entire semester, rather than in a large lump sum. Students may be encouraged to consistently work toward an end goal while receiving modest benefits along the way, which also keeps the benchmarks salient to students. In addition, students may be able to make better financial decisions throughout the term with this type of disbursement schedule.

Source: MDRC[48]

Research from a mid-sized public university in the Midwest also suggests the **positive effect of bundling financial aid with minimum academic requirements and student supports**. Facing high first- to second-year attrition rates, the University decided to freeze financial aid for all students placed on academic probation during their first semester. The University also required these students to meet with financial aid counselors to discuss why they were placed on probation, how to improve academic performance during the second term, and what the student must achieve to have financial aid reinstated. Between 1997, when the

[45] "Performance-Based Scholarships: Paying Students for Academic Performance." MDRC. Promising and Practical Strategies to Increase Postsecondary Success. U.S. Department of Education. http://www2.ed.gov/documents/college-completion/performance-based-scholarships.pdf

[46] Patel, et al., "Performance-Based Scholarships: What Have We Learned?" MDRC Policy Brief, August 2013. http://www.mdrc.org/sites/default/files/pbs_what_have_we_learned.pdf

[47] Ibid., p.3.

[48] Adapted from: "Performance-Based Scholarships," Op. cit., p.3.

program was first implemented, and 2012, first-year retention rates for aid-eligible students on academic probation increased from 20 percent to 60 percent.[49]

STUDENT SERVICES

Education experts indicate that student engagement is a crucial component of retention and graduation. Higher education institutions work to facilitate these sentiments in a variety of ways; indeed, most student strategies for augmenting persistence target the individual-level variables that affect retention through academic, personal, and social support services. Several studies have found that the interactions students have with individuals on campus—including faculty, advisors, peers, and administrators—directly impact retention rates.[50]

High-impact practices that target students are often designed to increase the number of positive interactions between people on campus, particularly students at a higher risk of dropping out. As previously outlined, rather than focusing on just one practice, most institutions combine strategies in a holistic manner to improve retention and graduation rates.[51] Given this, certain strategies may overlap or be most successful when implemented in conjunction with others.

A 2014 survey of university leaders, including provosts, student affairs officials, and enrollment managers, identified trends in student retention specifically. With regard to student services, researchers found that approaches varied by sector; the most popular approaches included "orientation, academic tutoring, alert systems, and writing and study skills programs," while private universities in particular tended to spend increased resources on "curricular developments, such as first-year programs and freshmen seminars."[52] These results highlight the important role that student support services, especially early in a student's time at college, can play in fostering longer-term persistence.

Figure 1.8 displays the 10 student strategies that are most commonly identified as effective by officials at private institutions. The strategies found most effective (ranked by percentage of four-year private institutions that rated the practice as "very effective") include:

- Giving students practical work experiences in their intended major;
- Required on-campus housing for first-year students; and

[49] Vasudevan, N., and P. Kumar, "Leveraging Financial Aid Programs to Increase Student Recruitment and Retention." Education Advisory Board, June 2012. http://www.etsu.edu/125/taskforces/Student_Life_Services/documents/Leveraging-Financial-Aid-Programs-to-Increase-Student-Recruitment-and-Retention.pdf

[50] Gentry, Op. cit., p.9.

[51] Yoder, Op. cit., p.5.

[52] "Student Success: Building a Culture for Retention and Completion on College Campuses." *The Chronicle of Higher Education*, 2015. p.6. https://www.pdx.edu/president/sites/www.pdx.edu.president/files/The%20top%20trends%20and%20practices%20for%20college%20student%20retention%20and%20completion.pdf

- Academic support through learning centers, math labs, one-on-one tutoring, etc.[53]

Two of these strategies are used by over 90 percent of the surveyed institutions, and all three were rated as at least "somewhat effective" practices by the preponderance of the respondents. Responses also indicate that the implementation of programs designed specifically for first-year students may be an effective, but under-used, retention strategy. Notably, instituting programs designed specifically for "students of color" is considered to be the least effective retention strategy: approximately 45 percent of private four-year institutions reported having such programs, yet only 16 percent considered them to be "very effective."[54]

Figure 1.10: Top 10 Most Effective Student Strategies for Retaining Students at Four-Year Private Institutions, 2015

Retention Strategy	Effectiveness Rating			Using Method
	Very Effective	Somewhat Effective	Minimally Effective	
Giving students practical work experiences in their intended major (e.g., internships, volunteer work, experiential learning, service learning)	55.1%	39.7%	5.1%	98.7%
Required on-campus housing for first-year students	53.2%	36.2%	10.6%	59.5%
Academic support (e.g., learning center, math lab, tutoring)	49.3%	46.7%	4.0%	94.9%
Honors program for academically advanced students	48.0%	44.0%	8.0%	63.3%
Programs designed specifically for first-year students (e.g., orientation for first-year students, a first-year experience program)	47.9%	43.7%	8.5%	89.9%
Tutoring	44.4%	50.0%	5.6%	91.1%
Programs for first-generation students	42.9%	46.4%	10.7%	35.4%
Mandatory first-year experience or orientation courses	40.3%	45.2%	14.5%	78.5%
Advising by professional staff, one-on-one	38.6%	47.4%	14.0%	72.2%
Student success coaching (internal)	35.2%	44.4%	20.4%	68.4%

Source: Noel-Levitz[55]

Academic Advising

Studies show that providing students with academic advisors positively influences a sense of connection to an institution, and thus, helps increase student persistence.[56] This is partially

[53] Bullet points adapted from: "2015 Student Retention and College Completion Practices Report," Op. cit., p.9.
[54] Ibid., p.10.
[55] Adapted from: Ibid., p.9.
[56] [1] Ensign, R. L. "Fast gainers: 4 Ways That Colleges Have Raised Graduation Rates." *The Chronicle of Higher Education*, December 2010. http://chronicle.com/article/4-Ways-to-Raise-Graduation/125613/
[2] Hu, S. and Y. Ma. "Mentoring and Student Persistence in College: A study of the Washington State Achievers Program." *Innovative Higher Education*, 35:5, November 2010. http://eric.ed.gov/?id=EJ901361

because academic advisors can act as a mentor to students, providing them with a positive point of contact and fostering motivation within their advisees. However, advising also serves a functional role in retention, ensuring that students have access to the information they need to hit specific benchmarks that are associated with perseverance. For example, academic advisors can suggest specific courses for students to take each semester to remain on track for graduation and to fulfill the requirements of their major. Advisors or mentors who know students on a more personal level may also be in a position to encourage students to enroll in coursework or majors that the student finds interesting. Advising "allows students to identify academic courses and majors that appeal to their intrinsic interests" because it increases motivation and academic achievement.[57]

Advising appears to be most useful when combined with other retention practices. For instance, by using on-track indicators, institutions target advising to individual students at heightened risk of dropping out. The University of North Carolina Greensboro, for example, created an advising team to work with students who had not yet declared a major after data revealed these students dropped out in higher numbers. The University provided undeclared students with more frequent and targeted advising and mentoring support to help them declare a major within their first year and become strategic about long-term course planning. As a result, between 2011 and 2014, retention among undeclared students increased from 76 percent to 80 percent.[58]

ACADEMIC SUPPORT

Many strategies discussed in this report encompass some amount of academic support, which is unsurprising given the needs of students who typically drop out of college. According to a large-scale survey of retention and college completion indicators, private four-year institutions rated academic support programs and services as the most effective strategy for retaining students. Institutions can strategically target first-year students, students in courses with high failure rates, and students identified as academically at risk. Widely used forms of academic support include:

- Peer tutoring;
- Small discussion sections for gateway courses; and
- Major-specific learning centers, which are particularly common in STEM disciplines.[59]

The University of Southern California, for instance, created an academic resource center for engineering students, which encompasses peer tutoring in group and one-on-one formats, in addition to supplemental instruction for gateway courses. The University also hires upper

[57] Guiffrida, D.A. et al. "Do Reasons for Attending College Affect Academic Outcomes? A Test of a Motivational Model From a Self-Determination Theory Perspective." *Journal of Student Development*, 54:2, March 2013. p.135. https://www.warner.rochester.edu/files/news/files/academicsuccess.pdf

[58] Yeado et al, Op. cit., p.11.

[59] Bullet points adapted from: Yoder, Op. cit., p.24.

classmen to sit in on traditionally difficult introductory courses in mathematics, biology, and chemistry, and then hold weekly, voluntary discussion sections.[60]

STUDENT-FACULTY ENGAGEMENT

Research indicates that faculty can positively affect student persistence by **designing relevant and student-centered curricula, communicating effectively with students, and engaging students in the learning process.**[61] Figure 1.9 outlines more specific ways in which professors can alter instruction to facilitate student persistence and achievement. Many of these strategies fulfill students' needs for autonomy and competence, while also instilling a sense of belonging and social engagement. Institutions might improve student-faculty engagement by establishing professional development programs that address teaching, communication, and curricular design skills or encourage the use of pedagogical practices that allow for some level of student choice.[62] A review of retention practices across higher education institutions in the United Kingdom found that the use of "group-based learning and teaching, and varied learning opportunities, including real-world learning and work placements" have positive effects on retention.[63]

Figure 1.11: Ways that Professors Can Facilitate Persistence and Achievement

Create a safe classroom climate that is warm, open, and organized to promote feelings of belonging.	Provide experiences that build upon students' strengths and instill a sense of purpose.	Interact with students: learn first names, talk after class, smile, praise performance, and actively respond to create positive faculty-student relationships.
Energize the emotional-motivational-personal core of the student to promote cognitive development.	Strive to understand each students' challenges and potential.	Ensure that students are comfortable with materials and teaching style.
Recognize students that are "at risk" and offer appropriate training and guidance.	Use a variety of assessment instruments that can be readily scored.	Provide concrete experiences. and engage students to process deep learning.

Source: Gentry; "Sustaining College Students' Persistence and Achievement through Exemplary Instructional Strategies"[64]

[60] Ibid.
[61] [1] Gentry, Op. cit.
[2] Yoder, Op. cit., p.15.
[62] Yoder, Op. cit., p.15.
[63] Thomas, L. "Building Student Engagement and Belonging in Higher Education at a Time of Change." What Works? Student Retention and Success Program, July 2012. pp.31–38. https://www.heacademy.ac.uk/sites/default/files/what_works_final_report.pdf
[64] Adapted from; Gentry, Op. cit., p.13.

REMEDIATION STRATEGIES

According to the National Conference of State Legislatures, between 28 and 40 percent of all first-time undergraduate students enroll in at least one remedial course during their college career.[65] Additional demographics concerning students who typically participate in remediation is as follows:

- Low-income, Hispanic, and African-American students are more likely to need remediation than their more affluent and White peers. Forty-one percent of Hispanic students and 42 percent of African-American students require remediation, compared to 31 percent of White students.
- Only one out of four U.S. students is minimally prepared for college across all four major subject areas. Just 25 percent of students who took the ACT met the test's readiness benchmarks in all four subjects (English, reading, math and science) in 2012. Only 5 percent of African Americans and 13 percent of Hispanics met the readiness benchmarks in all four subjects.[66]

EFFECTIVE SCREENING PRACTICES

Designing a screening approach that accurately sorts all incoming students into the appropriate course level is a perennial challenge. For example, an evaluation conducted by the Community College Research Center found that a number of students who scored below the cut-off benchmark on placement tests chose to opt out of remediation, and yet still performed well in college-level courses.[67] Other studies have found that remediation courses for students who failed their placement exam by a very narrow margin have a negligible—or even negative—impact on their subsequent academic success.[68]

Furthermore, there can be wide variety in the cut scores used across the higher education sector. However, College Board and ACT, the organizations behind the most commonly used standardized remedial screening tests, provide minimum recommended college readiness benchmarks or "cut score" suggestions. For example, Figure 1.10 provides these minimum cut-offs for several of the ACT's tests.

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[65] "Hot Topics in Higher Education: Reforming Remedial Education." National Conference of State Legislatures. http://www.ncsl.org/research/education/improving-college-completion-reforming-remedial.aspx

[66] Bullet points taken almost verbatim from: Ibid.

[67] Bailey, T., D.W. Jeong, and S. Cho. "Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges." The Community College Research Center, published in *Economics of Education Review*, 29:2, April 2010. http://ccrc.tc.columbia.edu/publications/referral-enrollment-completion-developmental-education.html

[68] "What We Know About Developmental Education Outcomes." Columbia Teachers College, the Community College Research Center, January 2014, p. 3. http://ccrc.tc.columbia.edu/media/k2/attachments/what-we-know-about-developmental-education-outcomes.pdf

Figure 1.12: ACT Test College Readiness Benchmarks

Subject-Area	ACT Plan Benchmark	ACT Test Benchmark	ACT Compass Benchmark
English	15	18	77
Reading	18	22	89
Math	19	22	52
Science	20	23	N/A

Source: ACT[69]

In a 2011 report, College Board announced its research-based determination of college readiness benchmark scores for the SAT: **1500 for the composite, or 500 on each of its three sections: critical reading, mathematics, and writing.**[70] Its research showed that students above this threshold, when compared to their peers below it, were more likely to:

- Enroll in college;
- Return for their second and third years of college; and
- Earn higher grades in both high school and college.[71]

In addition, students scoring above these benchmarks were also more likely to have taken a core curriculum in high school and to have taken more rigorous high school courses.

However, institutions may determine their own individual cut scores in response to changes in their student demographics and/or course placement patterns. Specifically, College Board recommends that institutions conduct formal validity testing of Accuplacer every three years to determine cut scores. These processes should include faculty members and should compare test scores to "end of-course grades, faculty evaluations, student evaluations, and/or the first test grade in a course."[72]

Not surprisingly, such flexibility results in a wide range of remedial cut scores across the higher education sector. A study from the National Assessment Governing Board found that most colleges rely solely on tests like the Accuplacer or Compass, with only 13 to 21 percent of the 1,560 respondent institutions reporting the use of any measures besides standardized test scores, such as students' high school performance data.[73] **As a result,**

[69] Adapted from: "What Are the ACT College Readiness Benchmarks?" ACT Research and Policy, September 2013, p. 1. http://www.act.org/research/policymakers/pdf/benchmarks.pdf

[70] Wyatt, J. et al. "SAT Benchmarks: Development of a College Readiness Benchmark and its Relationship to Secondary and Postsecondary School Performance." College Board, 2011, p. 5. http://research.collegeboard.org/sites/default/files/publications/2012/7/researchreport-2011-5-sat-college-readiness-benchmark-secondary-performance.pdf

[71] Bullet points adapted from: Ibid.

[72] "Accuplacer Program Manual – October 2014." College Board, Inc., October, 2014, p. 77. http://professionals.collegeboard.com/profdownload/accuplacer-program-manual.pdf

[73] Fields, R. "Tests and Cut Scores Used for Student Placement in Postsecondary Education: Fall 2011." National Assessment Governing Board, November 2012, pp. 6, 16, 22. http://www.nagb.org/content/nagb/assets/documents/commission/researchandresources/test-and-cut-scores-used-for-student-placement-in-postsecondary-education-fall-2011.pdf

there does not appear to be a consensus among postsecondary institutions of the benchmark for "just academically prepared."[74]

Several leaders across higher education, particularly in the community college sector, have commented on the risks associated with dependence on a single screening test and have chosen to incorporate multiple measures into their remedial screening processes. The President of Long Beach City College stated that his institution "fell victim to relying too heavily on one test." He also noted that students were sometimes unaware that they would need to take a screening test and thus unprepared for the exam, leading to an incomplete picture of students' academic capacity. After the institution noticed that students' high school performance was a better predictor of college performance, the college moved to relying on high school GPA as an alternative placement method.[75] Similarly, a spokeswoman for North Carolina's community college system said of a recent reform initiative: "If approved, student placement will be based on multiple factors [including high school GPA] instead of a single test score […] We anticipate a more accurate placement rate as a result."[76]

Findings such as these led researchers at the Policy Analysis for California Education (PACE) to examine screening tests more closely. The study was based on data from tens of thousands of incoming community college students. Using data on students' high school performance, placement test scores, and demographics, the study developed models to predict how students would have performed had they been placed in college-level courses. This investigation concluded that "a quarter to a third of students assigned to remedial classes based on standardized test scores could have passed college-level classes with a grade of B or better."[77]

PACE researchers' examination of alternative screening methods indicated that a surprisingly high degree of predictive power came from high school transcripts. **When relying more heavily on high school achievement data, researchers observed fewer misplacements and higher rates of success in college courses.** Ultimately, their analysis suggested that "incorporating high school transcript information could reduce incorrect placements by 30 percent and result in a 10 percentage point increase in the likelihood that students placed into college-level in the relevant subject would complete the course with a grade of C or higher, by the end of their first semester."[78]

[74] Ibid., p.viii.
[75] Adams, C. "Community Colleges Rethink Placement Tests." *Education Week,* October 16, 2012. http://www.edweek.org/ew/articles/2012/10/17/08placement.h32.html
[76] Fain P. "Placement Tests Still Rule." *Inside Higher Ed,* December 21, 2012. https://www.insidehighered.com/news/2012/12/21/colleges-rely-heavily-popular-remedial-placement-tests
[77] Scott-Clayton, J. "Improving the Targeting of Treatment: Evidence From College Remediation." Policy Analysis for California Education, November 11, 2014. http://www.edpolicyinca.org/blog/improving-targeting-treatment-evidence-college-remediation
[78] Ibid.

SUMMER BRIDGE PROGRAMS

Once universities identify who among their student population would benefit from remedial services, they must next select the support programs with which to aid them. As research has begun to show a lack of consistent, positive effects from traditional remediation methods, demand for alternative remedial strategies is growing.

Sacramento State University has highlighted various studies on traditional remedial education programs, which show inconsistent results. Notably, a 2008 study in Ohio found positive effects on degree completion, as well as the rate of student transfers to more selective institutions. However, that same year in Florida, one of the Ohio study authors found only slight positive effects on student persistence, and *no* effect on degree completion or transfers to more selective institutions. Yet another study of remedial students in Texas found no evidence of positive effects–and possibly even slight negative effects—on student persistence, degree completion, transfers, and future job earnings.[79]

Thus, many education specialists are looking to move beyond the traditional university-based, non-credit class model of remediation in search of alternative, more effective strategies. One of the newer approaches to remediation is the use of tactics designed to keep students out of remediation in the first place. Such approaches are sometimes referred to as "avoidance models" or "proactive remediation." They are intended to improve college readiness among high school students and mitigate the need for college-level remediation, addressing the source of the problem rather than its later symptoms. One of these program types, the **summer bridge, refers to a summer program designed to provide intensive support for students in their transition to college**.

According to College Parents of America—a membership-based organization of stakeholders across higher education—summer bridge program content differs considerably among institutions, but its basic purpose is to give students a head start for their initial fall semester. Content areas may include study skills, time management, learning styles, study strategies, career counseling, and computer literacy.[80] Academic content may include accelerated instruction in developmental math, reading, and writing skills. Some programs also incorporate a community service element. While these programs take a variety of forms, experts suggest that the overall aims of such programs should be to prepare students to integrate into college academically and socially.[81] This means that the programs must meet a variety of needs among a diverse group of students. Effective programs enhance student achievement during the first year, as well as improve first- and second-year

[79] Howell, J. "Ready or Not?: California's Early Assessment Program and the Transition to College." Sacramento State University. https://www.utdallas.edu/research/tsp-erc/pdf/seminar_howell_cal_early_assessmt_prgrm.pdf

[80] "What Is A College Summer Bridge Program?" College Parents of America. http://www.collegeparents.org/members/resources/articles/what-college-summer-bridge-program

[81] Hansen, M., S. Evenbeck, and G. Williams. "The Influence of a Summer Bridge Program on College Adjustment and Success: The Importance of Early Intervention and Creating a Sense of Community." Paper presented at the 2008 AIR Forum: Seattle, Washington. p. 2. http://irds.iupui.edu/Portals/SDAE/Files/Documents/(2008)%20Summer%20Bridge%20College%20Adjustment%20&%20Success%20(AIR%20Paper).pdf

retention rates. Furthermore, effective bridge programs offer particular support for at-risk students, helping them understand college expectations and build confidence.

Researchers from the National Center for Postsecondary Research (NCPR), the Community College Research Center (CCRC), MDRC, and the University of Virginia conducted research regarding summer bridge programs in Texas and identified several goal outcomes for such programs. In particular, effective summer bridge programs

- Reduce the need for developmental courses in college;
- Expose students to college academic and social expectations;
- Provide students with face time with college faculty and administrators;
- Offer opportunities to develop close social networks among small cohorts of students; and
- Reduce the need for summer jobs (in those programs that provide student stipends).[82]

In one study, summer bridge programs were offered by two different four-year institutions with open-admissions, as well as six community colleges. Students attended the programs for three to six hours on a daily basis for four or five weeks, depending on location. They received instruction in at least one area of academic need, as well as guidance regarding general college expectations. The common features across all eight programs were "**accelerated instruction in math, reading, and writing; academic support; a college knowledge component; and the opportunity to earn a stipend of $400."**[83] The programs also included mentoring and tutoring that focused on study skills, test-taking strategies, time management, career assessment, and learning styles. To assist students in developing relevant college knowledge, the programs also included tours of campus as well as introductions to college resources, financial aid, and/or degree plans. Program costs ranged from $835 per student to $2,349 per student, with an average cost per student of $1,319.[84] Figure 1.11 displays some of the implementation findings from the study.

[82] Bullet points adapted from: Pretlow, J. and C. Mitchell. "Developmental Summer Bridge Programs: Implementation and Early Evidence From A Random Assignment Study." National Center for Postsecondary Research, 2010. p.5. http://www.postsecondaryresearch.org/i/a/document/14802_NCPRBridgesASHEConference.pdf

[83] Barnett, E., et al. "Bridging the Gap: An Impact Study of Eight Developmental Summer Bridge Programs in Texas." The National Center for Postsecondary Education, June 2012. http://www.mdrc.org/sites/default/files/full_629.pdf

[84] Ibid., p.10.

Figure 1.13: Summer Bridge Program Implementation Findings

AREA	CHALLENGES	PROMISING PRACTICES
Recruitment	▪ Colleges must recruit more students than previously (requires greater investments of time and money)	▪ Relationships with counselors ▪ Stipend: attracted students' attention and attracted lower-income students
Instruction	▪ Mixed-ability classes ▪ Acceleration	▪ Use of mentors and tutors in classrooms and labs ▪ Varied pedagogical techniques
College Knowledge	▪ Presenters who were not well-connected to the program	▪ Intentional, informal sharing of information ▪ Location on campus
Student Supports	▪ Using lab time effectively ▪ Finding the right mentors and tutors	▪ Highly trained and structured tutoring and mentoring ▪ Integration of lab and class work

Source: National Center for Postsecondary Research[85]

RETENTION STRATEGIES FOR TARGET STUDENT GROUPS

Finally, beyond the broad strategies presented above, certain policies and programs may be particularly beneficial for certain student subgroups. In the remainder of this section, Hanover Research explores retention considerations for two specific student subgroups: minority students and student athletes.

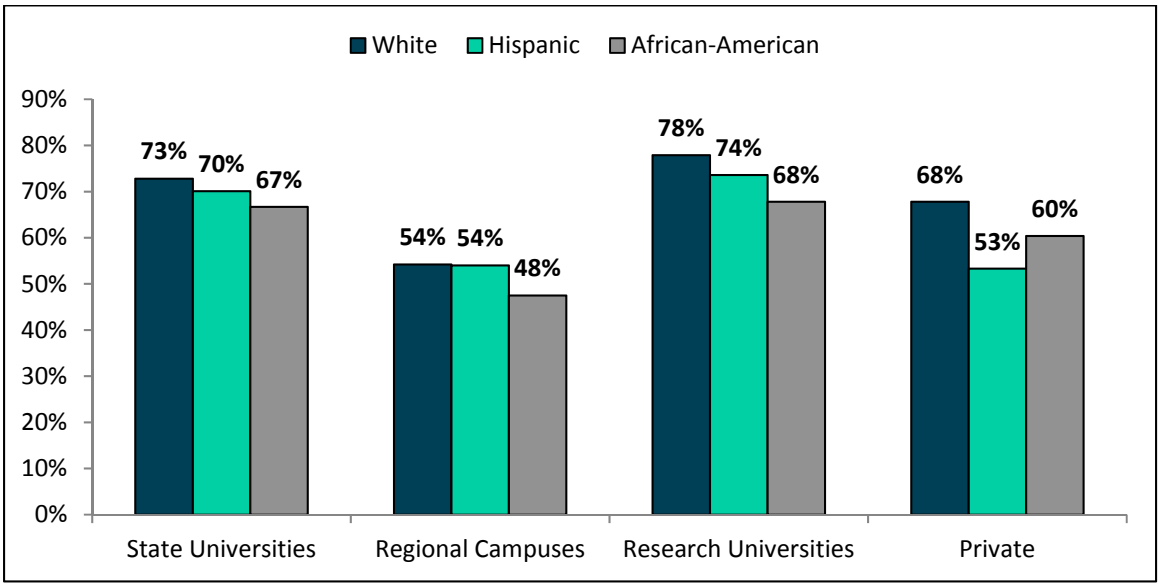
MINORITY STUDENTS

The Indiana Project on Academic Success, which assesses the state of higher education in Indiana, found that among students in the state, minority students—specifically Hispanic and African-American students—persist in college at lower rates than their White peers (Figure 1.14). This indicates that these students may need additional or specifically targeted supports that address their unique needs in a more nuanced manner than broader support services. Often, for example, minority students can feel isolated at institutions with little racial or ethnic diversity, and can seek pockets of racially-similar students with which to associate. **Colleges and universities, then, are encouraged to develop activities and support structures that help minority students become more integrated into the campus community.** Indeed, "an inclusive and welcoming institutional environment and the connection of students to that environment have been linked to persistence […] students who engage on campus may take advantage of more opportunities to secure academic membership and ultimately improve chances of persistence."[86]

[85] Adapted from: Pretlow and Mitchell, Op. cit., pp.15–16.

[86] Carter, D.F. "Key Issues in the Persistence of Underrepresented Minority Students." *New Directions for Institutional Research*, 130, Summer 2006. p.40. https://deepblue.lib.umich.edu/bitstream/handle/2027.42/49309/178_ftp.pdf?sequence=1

Figure 1.14: One-Year Retention Rates among Indiana Students by Institutional Classification



Source: Indiana Project on Academic Success[87]

There is a specific link between certain majors and minority student attrition, suggesting that institutions can monitor high-failure majors and proactively extend support to at-risk minority students. Among White and Hispanic students, there is generally no link between chosen major and likelihood of attrition; however, there are several academic programs in which African-American students demonstrate lower retention rates. According to the Indiana Project on Academic Success, "these findings raise questions about engagement in academic programs and whether the content of major programs meets the expectations of African-Americans."[88]

In one study of Indiana minority students in higher education, data indicated that, "controlling for preparation, college grades, and remedial courses, African-Americans with majors in *business, education, health, and computer science* did not persist as well as their peers with undeclared majors."[89] Indeed, minority students in most applied majors do not persist as well as their counterparts who enter as undeclared majors. This implies that institutions can target minority students in applied fields for additional and/or targeted support to foster early engagement.

Moreover, colleges and universities are encouraged to test new academic support options for African-American students in low-retention majors. For example, they can pilot more engaging curricula that highlight multicultural perspective or develop new academic

[87] Adapted from: St. John, E.P. et al. "Diversity and Persistence in Indiana Higher Education: The Impact of Preparation, Major Choices, and Student Aid." Indiana Project on Academic Success, October 2004. p.31. http://www.indiana.edu/~ipas1/documents/DiversityandPersistenceinInHiEd04_01.pdf

[88] Ibid., p.30.

[89] Carter, Op. cit., pp.42–43.

experiences designed specifically for certain student groups. To assess how minority students are engaging in specific departments, faculty members or department leaders should maintain a record of persistence rates and potentially develop courses or internal support services that may help increase those rates.[90]

For minority students, enrollment in remedial language and math courses has been shown to increase retention rates. The Indiana Project on Academic Success asserts that "this means that achievement is important but support services can help students who have additional academic needs."[91] Financial aid has also been positively associated with student persistence among minority populations; in particular, any sort of aid or grant award increases the likelihood that an African-American student will remain at university, while work-study programs are generally more appealing to Hispanic students.[92] Other programs that have been shown to be effective at bolstering minority student retention rates include:

- Advising and/or counseling
- Tutoring
- Basic skills development
- First-year orientation
- Faculty involvement
- Study skills courses
- Test-taking clinics
- Career advising[93]

STUDENT ATHLETES

In a study of over 12,890 National Collegiate Athletic Association (NCAA) student athletes, data revealed that the average retention rate among male student athletes was 91 percent, while the rate among their female counterparts was slightly higher at 94 percent. Further, postsecondary institutions can generally expect athletes who participate in individual sports to persist at marginally higher rates that their peers who participate in team sports (94 percent and 92 percent, respectively).[94] The results from the large-scale analysis suggest that four-year institutions need to focus support services differently between student athlete subgroups, with male students and those involved in team sports sometimes needing additional support in comparison to their female and individual sport peers. Examples of effective retention strategies for this student population include:

- Peer mentoring initiatives;
- Assigning more senior-level advisors to the athletes who are at greater risk of non-retention; and/or
- Accommodating more frequent study hall and tutoring sessions.[95]

[90] St. John et al., p.31.
[91] Ibid.
[92] Carter, Op. cit., p.36.
[93] Bullet points adapted from: Ibid., p.40.
[94] Le Crom, C.L. et al. "Factors Contributing to Student-Athlete Retention." *Journal of Issues of Intercollegiate Athletics*, 2009. p.17. http://csri-jiia.org/documents/publications/research_articles/2009/JIIA_2009_2_Crom_Publish%20Copy_1.0.pdf
[95] Bullet points taken verbatim from: Ibid., p.22.

Importantly, university leaders need to ensure that student athletes do not become "disillusioned with and detached from academics."[96] Often, during recruitment efforts, these students are offered a multitude of support systems such as encouraging coaches and summer camps. However, these students are not always prepared for the rigorous transition into the academic year, and can sometimes be caught off guard when receiving low grades. In short, "the lower qualifications and overall lack of preparation that student-athletes brought with them into the college environment appear to have set the stage for their academic demise as they ultimately succumb to the difficulties of college life."[97]

Among Division II schools, for example, student athletes expressed a desire to develop closer personal relationships and more direct involvement with their professors (as compared with student athletes at Division I institutions). In particular, many student athletes at smaller institutions report that they expect professors to be academically *and* athletically (i.e., appear at sports matches) supportive.[98] Further, researchers identified the most important factors that contribute to student athletes' selection of postsecondary institution and their likelihood of staying there: "degree-program options, head coach, academic support services, type of community in which the campus is located, and the school's sports traditions."[99]

Thus, it is important, then, to align both academic and athletic expectations between prospective student athletes and institutions. Much of the onus of this alignment typically falls on coaches and athletic assistants, as they spend the most time with student athletes. Indeed, academic experts acknowledge the concerted effort that many stakeholders (e.g., coaches, administration, faculty, and student tutors) must make to ensure that student athletes achieve academically and thus persist in higher education.[100]

[96] Weiss, S.M. and T.L. Robinson. "An Investigation of Factors Relating to Retention of Student-Athletes Participating in NCAA Division II Athletics." *Interchange (0826-4805)*, 44:1/2, December 2013. p.87. Accessed via EBSCOHost.
[97] Ibid.
[98] Ibid., p.98.
[99] Le Crom et al., Op. cit., p.15.
[100] Weiss and Robinson, Op. cit., p.88.

SECTION II: PROFILES OF INNOVATIVE INSTITUTIONS

In this section, Hanover Research explores innovative approaches to increasing student retention rates at various institutions. In particular, the section includes discussion of several institutions identified by the U.S Department of Education (USDOE) as having developed particularly promising or innovative retention programs. The USDOE database, which is organized by program area, identifies postsecondary institutions that have implemented successful programs that specifically target sustained student persistence.[101]

ALBION COLLEGE

Albion College (Albion) is a small, private liberal arts institution located in Albion, Michigan. There are currently 1,382 students enrolled at Albion, the majority of which live on campus and pursue either a Bachelor of Arts or a Bachelor of Fine Arts degree. The institution employs 105 full-time faculty, 90 of whom are tenured or tenure-track.[102]

Albion offers a wide range of support services for students who are underperforming and subsequently at-risk of dropping out. In order to target these at-risk students based on their specific needs, the institutions maintains three distinct levels of academic probation:

- **Semester Probation**: A student who has a semester grade point average below 2.0 for one semester and has a cumulative grade point average above 2.0 will be placed on semester probation.
- **Academic Probation**: A student is placed on academic probation whenever his or her cumulative grade point average falls below 2.0, or when the semester average falls below a 2.0 for two consecutive semesters, even though the cumulative average remains a 2.0 or above.
- **Terminal Academic Probation**: Some students, because of their extremely low grade point averages, are classified under terminal academic probably and given a specific grade point average to obtain for their work during the following semester. Students on terminal academic probation for the first time are also required to successfully complete IDY 100: Academic Success during that semester. Students are subject to suspension if they fail to meet the requirements of terminal academic probation.[103]

[101] "Promising and Practical Strategies to Increase Postsecondary Success." U.S. Department of Education. http://www.ed.gov/college-completion/promising-strategies/tags/Retention
[102] "Key Facts." Albion College. http://albion.edu/about-albion/key-facts
[103] Bullet points taken verbatim from: "Academic Status." Albion College. http://catalog.albion.edu/content.php?catoid=1&navoid=14#academic-status

Students who classify for Terminal Academic Probation (TP) are required to participate in Albion's **Academic Success Program (ASP).** ASP comprises three core elements, which include a theory-based course for credit, study sessions, and individual academic coaching; indeed, the program is "designed to integrate interventions that focus on strategy, effort, and ambivalence in an attempt to address the specific issues that TP students experience."[104] The first step in the ASP is to enroll in, and later successfully complete, the Academic Success (IDY 100) course:

IDY 100 Academic Success: Utilizes lecture, discussion, readings, and experience-based learning to provide students with an intellectual and practical understanding of psychological theories and concepts related to academic success. Focuses on constructs related to motivation, effort, personal insight, metacognition, self-regulation, the process of change, and emotional intelligence.[105]

IDY 100 underscores the importance that study strategies and habits can have on success in higher education, going beyond regular course content to address any issues TP students may have as they arise. For example, "if a student performs poorly on an assignment, the student is encouraged to explore the specific processes that contributed to this […] and options for improved performance in the future."[106]

Students in ASP are further required to attend study sessions three times a week to complete course readings, review notes, create and draft essays, and perform other tasks related to the program as a whole. Importantly, no electronic devices are permitted in the study sessions to ensure that students are fully concentrating on the work. Finally, academic coaching (provided by a member of the Academic Affairs department at Albion who is a licensed clinical psychologist) serves as "not simply an instructor to the student, but also a mentor, advocate, academic coach, supplemental academic advisor, and 'point person' for the ASP students during their TP semester."[107] Through its holistic and personalized approach to student mentorship, ASP has increased the persistence rates of struggling TP students significantly in both the semester and year following the intervention (Figure 2.1).

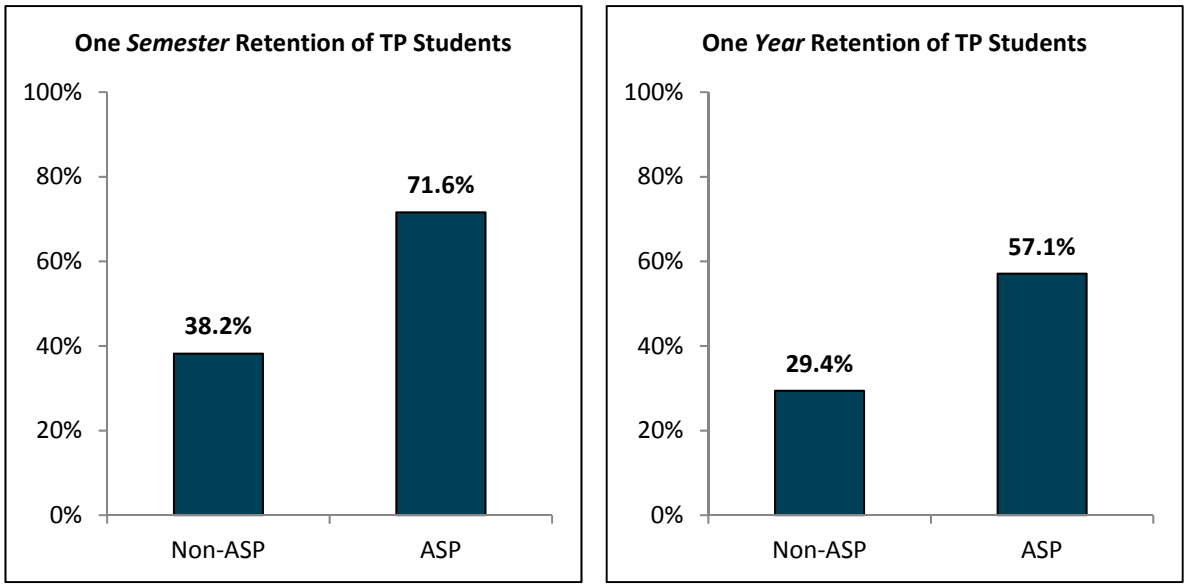
[104] Wolf, B. "Albion College's Academic Success Program." U.S. Department of Education. p.1. http://www2.ed.gov/documents/college-completion/albion-college.pdf

[105] "Interdisciplinary." Albion College. http://catalog.albion.edu/content.php?filter%5B27%5D=IDY&filter%5B29%5D=&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=1&expand=&navoid=12&search_database=Filter#acalog_template_course_filter

[106] Wolf, Op. cit., p.2.

[107] Ibid.

Figure 2.1: Results of Albion's ASP Program on TP Students



Source: U.S. Department of Education

To boost retention rates among students who are not as academically challenged as the TP cohorts, but who still require additional support, Albion promotes the **Briton Path.** The Briton Path is specifically designed for incoming students who are accepted to Albion with lower-than-average grade point averages and/or test scores (i.e., SAT or ACT). The admissions office monitors these data points, and recommends for admittance into the Briton Path any students whose scores are notably lower than their peers. According to the website, "the program components are opportunities to guide you towards the habits and skills of a successful college student. You can gain a head start that can be crucial for early success."[108] The core elements of Briton Path are very similar to ASP, and simply preempt any potential issues as opposed to reacting to them:

- **Habits**: Requirement of attending study group three evenings a week to ensure you get used to spending the necessary time learning outside the classroom.
- **Academic Coach**: During your study group time you will meet with an older students; this student is a guide for your journey and can be a role model, mentor, and a source of information on strategies and skills.
- **Weekly Group Review Sessions**: Some introductory courses such as Psychology 101 and Philosophy 101 will have weekly review sessions with your peers, where you will learn new study methods as you increase retention of class material.[109]

Importantly, however, the Briton Path program is not remedial, as students enroll in regular courses and participate in mainstream discussions and lectures. Like their peers, Briton Path

[108] "Briton Path." Albion College. https://www.albion.edu/academics/learning-support-center/the-briton-path
[109] Bullet points taken verbatim from: Ibid.

students will sign-up for courses during the student orientation (SOAR, or Student Orientation, Advising, and Registration program) without additional restrictions. Students will participate in the program for one or two semesters, depending on their grade point averages (a 2.0 threshold) after the Fall semester concludes.[110]

Finally, the SOAR program is one component of the more comprehensive **First Year Experience Program (FYE),** which helps all students—regardless of academic performance or previous credentials—adjust to university life. As discussed in Section I, this can have significant impacts on how students view and approach higher education and on their persistence rates. The FYE program "focuses on first-year students and their transitions from high school to college [and] is designed to provide support and encouragement from a student's first day of orientation to the final day of the first year at Albion."[111]

Figure 2.2: Core Elements of Albion's FYE Program

Academic Transition

- Through the FYE program, first-year students are introduced to the liberal arts tradition and the rigors of academic excellence.
- The FYE program helps students establish habits of mind and patterns of decision-making that will ensure achieving optimal success through a student's four years at Albion.
- The major component of the FYE program supporting first-year students' academic transition are the First-Year Seminars.

Social Transition

- Since Albion is a four-year residential college, first-year students are assisted with their social transitions by upper-class resident assistants and Student Affairs staff members.
- Programming and activities through the first-year living environments will take place through the FYE Residential Program Learning Strategies. The Learning Strategies will address issues such as study skills, time management, wellness, diversity, sustainability, and communication.

Source: Albion College[112]

PAUL SMITH'S COLLEGE

Paul Smith's College (Paul Smith's), located in the Adirondacks region of New York, is a small liberal arts institution that boasts a 15:1 student-to-faculty ratio and offers programs across 17 bachelor's-level and seven associate-level degree options. Paul Smith's currently enrolls approximately 900 students, with 34 percent coming from out of state and 9 percent identifying as minorities. Notably, 98 percent of all students receive scholarship or grant

[110] "Frequently Asked Questions." Albion College. https://www.albion.edu/academics/learning-support-center/the-briton-path/faq
[111] "First-Year Experience." Albion College. https://www.albion.edu/student-life/first-year-experience
[112] Adapted from: Ibid.

aid.[113] Recently, Paul Smith's has dedicated substantial resources to increasing student retention rates.[114]

The institution operates an Academic Success Center, which oversees and manages the many of Paul Smith's dedicated support services. The mission of the Academic Success Center states that its purpose is "to assist Paul Smith's College students in achieving their academic goals by providing a variety of effective academic support options."[115] The Center offers a variety of student supports that target all students, not just those at risk of dropping out, including:

- **Academic Coaching**: Overwhelmed with workload, trouble remembering or unsure of your academic program? An academic success counselor can help you get on track.
- **Tutoring**: Individual or small-group tutoring is available free of charge for most classes taught at Paul Smith's College.
- **Supplemental Instruction and Study Groups**: Supplemental instruction provides regularly scheduled support in challenging courses. You will review and reinforce concepts while learning important study skills.
- **Writing Center**: Stop by the Writing Center to get help with writing assignments in any subject.
- **Academic Recovery**: The Academic Recovery Program (ARP) helps students who have been placed on academic probation achieve classroom success.

ARP is particularly targeted toward students who are at risk of suspending their studies. According to the program website, "participants work one-on-one with a personal advocate, either a faculty or staff member, who will help them work toward achieving their academic goals."[116] Students are recommended to ARP based on their grade point averages; for students who have taken more than 40 credit hours, the minimum academic standard is 2.0 GPA.[117] Those who enter the program are required to sign a contract, outlining their responsibilities and the College's expectations (Figure 2.3).

[113] "At a Glance." Paul Smith's College. http://www.paulsmiths.edu/about/at-a-glance/
[114] [1] Turner, M.L. "Comprehensive Student Support Program." *University Business*. https://www.universitybusiness.com/mox/awards/comprehensive-student-support-program
[2] "Paul Smith's College Improves Student Retention by 17 Percent Through Comprehensive Student Support Program." Starfish Solutions, January 2014. http://www.starfishsolutions.com/2014/01/psmiths_retention_pr/
[115] "Academic Success Center." Paul Smith's College. http://www.paulsmiths.edu/academicsuccess/
[116] "Academic Recovery Program." Paul Smith's College. http://www.paulsmiths.edu/academicsuccess/academic-recovery-program/
[117] "Standards of Academic Progress." Paul Smith's College, Fall 2015. http://www.paulsmiths.edu/academicsuccess/files/2016/03/Standards-of-Progress.F15-1vpl26g.pdf

Figure 2.3: ARP Contract at Paul Smith's

Your continued enrollment at Paul Smith's College is contingent upon your compliance with the conditions of the Academic Standards Committee, your ARP Advocate, and the official letter you have signed with the Registrar. Therefore, as a participant in the Academic Recovery Program, you must comply with the following:

- Take no more than _____ credits.
- Attend all of your classes. Your attendance will be monitored.
- Meet with your academic advisor within the first two weeks of the semester.
- Repeat the following courses: _____
- Acquire & utilize the following academic support services (tutoring, SI, study groups, etc.) required by the Academic Standards Committee and your advocate:
  _____

However, the cornerstone to Paul Smith's turnaround in student persistence has been its **Comprehensive Student Support Program.** The Program, launched in 2010, "emerged from the institution's *inclusive* and *campus-wide* self-study and strategic planning processes, which identified problems with the institution's information flow and communication management between faculty and student support offices."[118] It is organized around four key phases:

- Phase One: Identification of at-risk students.
- Phase Two: Intervention strategies.
- Phase Three: Feedback to faculty.
- Phase Four: Assessment and evaluation.[119]

The cornerstone to the Program is the warning flag system, which identifies students who at in danger of dropping out or failing and places them in dedicated interventions according to their level of need. The warning system is organized around three levels of need: *information, action,* and *urgent* (Figure 2.4). Informational flags are the first level, and "while these flags notify people of a concern about a student that does not rise to the level of necessarily calling for specific action, they allow advisors and support offices to gain important and accurate information about a student's progress." Next, action flags "are the second level of flag and they identify students who are in need of intervention." Finally, an urgent flag "asks everyone who has a relationship to the student to immediately intervene with the student as they are in danger of being suspended within the next few days."[120] Appendix A presents the intervention options for students who trigger Action Flags.

[118] "Paul Smith's College Improves Student Retention by 17 Percent Through Comprehensive Student Support Program," Op. cit.

[119] Bullet points adapted from: Taylor, L. and V. McAleese. "Beyond Retention: Supporting Student Success, Persistence, and Completion Rates through a Technology-based, Campus-wide, Comprehensive Student Support Program." Paul Smith's College and the U.S. Department of Education. p.iii. http://www.ed.gov/college-completion/promising-strategies/tags/Retention?page=2

[120] Ibid., pp.6–8.

Figure 2.4: Warning System Flags at Paul Smith's

LEVEL 1: INFORMATIONAL FLAGS		
From faculty out to support offices:	From administrative offices to support offices and advisors:	
▪ Low grades ▪ Attendance concerns ▪ Missing work ▪ Social/Personal Concern ▪ No-show in class ▪ Behavioral issues ▪ Midterm grade below a C	▪ Academic probation ▪ Transitional program ▪ High risk ▪ CSI risk factors ▪ Registrar's Office, Financial Aid, Student Accounts, and/or Health Services holds ▪ Did not pre-register ▪ Leaving at end of semester	
LEVEL 2: ACTION FLAGS		
From faculty out to support offices:	From support offices to other offices and advisors:	Automated system flag:
▪ Student development – private ▪ Health concern – private	▪ Missed required tutoring ▪ Missed required ARP meeting ▪ Required tutoring will be cancelled	▪ 3 Academic Flag Warning – Support Action ▪ 6 Academic Flag Warning – Advisor and Support Action
LEVEL 3: URGENT FLAG		
Calls for intervention:	Private notification to SafetyNet-behavioral intervention team:	Notification to campus:
▪ Suspension for non-payment ▪ Academic Recovery Program suspension warning ▪ Health services suspension warning ▪ Financial aid loss of funding	▪ SafetyNet Notification of a health/safety or behavioral concern	▪ Trespass notice (used when a student is banned from campus)

Source: Paul Smith's College and the U.S. Department of Education[121]

METROPOLITAN STATE UNIVERSITY OF DENVER

The Metropolitan State University of Denver (MSU Denver) is a public, four-year institution located in Denver, Colorado, and is currently celebrating its fiftieth year of operation. The institution currently enrolls almost 20,000 students, and MSU Denver's student composition includes large populations of first-generation, minority, and non-traditional students.[122]

In 2007, MSU Denver began developing targeted programs aimed at increasing student retention, with a particular emphasis on minority student engagement and persistence. According to a dedicated retention task force, "recruitment programs must be designed from a retention perspective in order to maximize the effective use of limited institutional

[121] Adapted from: Ibid.
[122] "About MSU Denver." Metropolitan State University of Denver. http://www.msudenver.edu/factsheet/

resources."[123] As such, MSU Denver has instituted a variety of key initiatives to promote student persistence, particularly among minority students, organized primarily around four key topic areas:

- **Environmental Sensitivity**: an institution's ability to provide a comfortable environment for learning and socializing is a key factor in facilitating the intellectual and social development of all students.
- **Financial Resources**: by far the biggest obstacle to college completion for many students is a lack of financial resources; expanded financial aid, better information about financial aid, and simplified financial aid processing are important elements.
- **Role Models and Mentorships**: role models set a pattern for students to develop successful expectations.
- **Opportunities for Leadership**: the goal is to guide incoming students in the development of group affiliation and identification within the college.[124]

Based on these themes, MSU Denver completed a Strategic Enrollment Management Plan (SEM) in 2013 to help the institution achieve recruitment and retention goals. The Plan draws from research-based practices, many of which were identified by the task force, and establishes clearly defined tactics and objectives for student retention. One of the key components of the SEM is indeed to "increase the success of [MSU Denver] students as defined by increased first-year student retention."[125] The institution created specific retention rate goals for full-time, transfer, and part-time freshmen, as well as goals for decreasing the persistence gap between students who required remedial coursework and those who did not. Specifically, the SEM promoted the expansion of three programs: **First Year Success, Excel,** and **Academic Vital Signs.**[126]

The First Year Success (FYS) program targets entering freshmen for dedicated support; according to the website, "students set the stage for future success through community-based learning, peer support, and a wide range of meaningful co-curricular activities."[127] FYS is a relatively comprehensive support program that encapsulates a number of core components such as linked courses and access to enhanced and supplemental resources (Figure 2.5). The program collaborates with the departments of Student Academic Success, Academic Advising, and Career Services to provide incoming students with robust support structures that help them integrate within the community and succeed academically and socially.

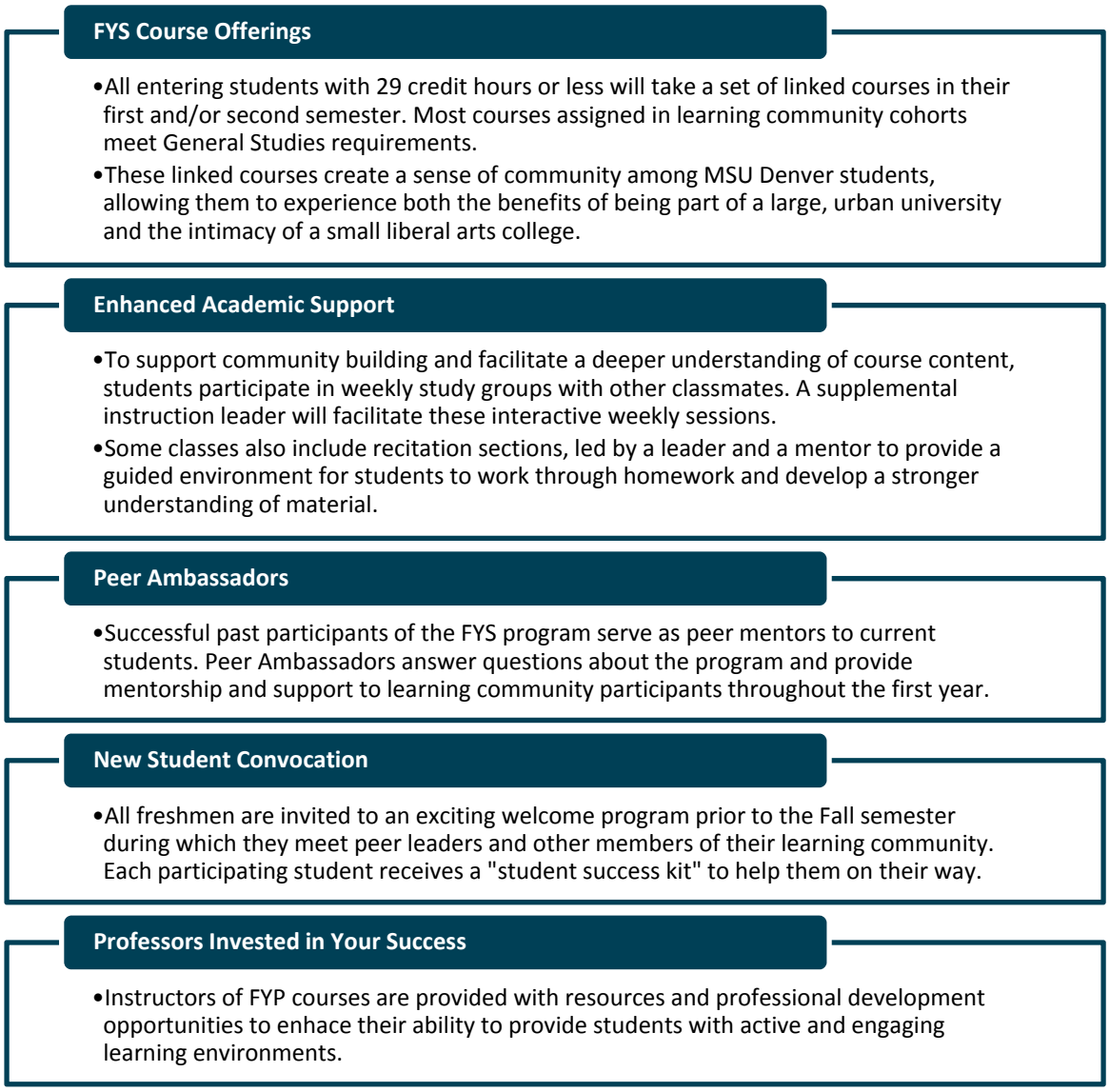
[123] Sandoval-Lucero, E. "HIS Taskforce: Best Practices in Recruitment and Retention: Recruitment and Retention Subcommittee." Metropolitan State University of Denver, September 2007. p.4. https://www.msudenver.edu/media/content/presidentofficeof/BestPracticesInRecruitmentRetent.pdf
[124] Bullet points adapted from: Ibid., pp.6–12.
[125] "MSU Denver Strategic Enrollment Management Plan." Metropolitan State University of Denver, February 2013. p.2. https://www.msudenver.edu/media/content/academicandstudentaffairs/MSUDenver_SEM_022713.pdf
[126] Ibid., pp.17–18.
[127] "First Year Success." Metropolitan State University of Denver. https://www.msudenver.edu/fys/

The Excel program is a pre-collegiate opportunity "designed to support and motivate high school students to achieve their higher education goals."[128] The program establishes a partnership between MSU Denver and high schools in the area to ensure that graduating high school seniors are prepared to enter higher education. MSU Denver offers an English and a Spanish-bilingual Excel program wherein students meet individually with University ambassadors and discuss the student's plans after graduation. Guidance can include aid with college application and enrollment processes, financial aid applications, scholarship searches and application, essay support, and bilingual parent workshops.[129] Students who participate in the Excel pre-collegiate program are able to also participate in the Excel program at MSU Denver, which highlights student involvement within the larger university community through:

- ***Get Connected!* Events**: Our *Get Connected!* events are opportunities for students to meet other Excel at MSU Denver students in fun, engaging environments such as basketball games, Denver Nugget Games, and Dinner and a Play.
- **Workshops**: Our workshops provide students with information on a variety of topics to help them stay focused and be successful; topics include time management, study skills, career exploration, and peer study groups.
- **Mentoring**: Excel at MSU Student Mentors serve as a resource for all Excel Program candidates and are there for you; their goal is to help you succeed and provide help with a variety of things, from navigating the campus to finding resources.[130]

[128] "Excel Pre-Collegiate." Metropolitan State University of Denver. https://www.msudenver.edu/excel/excelpre-collegiateprogram/
[129] Ibid.
[130] Bullet points adapted from: "Excel at MSU Denver." Metropolitan State University of Denver. https://www.msudenver.edu/excel/excelprogramatmsudenver/

Figure 2.5: Core Components of the FYS Program at MSU Denver



Source: Metropolitan State University of Denver[131]

Finally, the Academic Vital Signs program—which is recognized by the USDOE as a promising retention strategy—provides MSU Denver administrators with an early-detection system for identifying students who may be at risk of academic failure or dropping out. The program is operated through the Metro State Health Center, which works with MSU Denver to identify students who may need additional support. Academic Vital Signs consists of four key objectives: (1) identify students at risk academically for whatever reason; (2) refer at-risk students to the appropriate campus agency for intervention; (3) follow up with at-risk students to ensure they are receiving the assistance they need; and (4) track and report on

[131] Adapted from: "About First Year Success." Metropolitan State University of Denver. https://www.msudenver.edu/fys/aboutfirstyearsuccess/

students referred as part of the initiative.[132] In this way, MSU Denver can assist students who may not seek out academic supports but may be in danger of leaving the institution.

NORTHWEST MISSOURI STATE UNIVERSITY

Northwest Missouri State University (NMSU) is a state-assisted, four-year regional institution of higher education situated in Maryville, Missouri and currently enrolls around 7,000 students.[133] As of Fall 2016, domestic students of color made up 13 percent of the NMSU student population.[134]

NMSU has a number of programs dedicated to increasing student retention. Its most notable initiative is the **Career Pathing Program**, which was created in 2004 after surveying neighboring institutions' student employment programs and its own student employee satisfaction. The surveys found that NMSU student employees wanted opportunities for pay advancement, increased responsibility, and skill development for future careers. [135]

The Career Pathing Program, a structured student-employee "earn and learn" development program, was created to provide the requested opportunities for student employees, as well as the student employee performance evaluation tool. [136] The program is administered through NMSU's overarching Student Employment Program and it operates on a university-financed budget of approximately $14,000 a year. The program's set objectives include the following:

- **Promote opportunities for student employees to build relations and basic skills** that enhance current employment as well as future career pathways and encourage retention and completion of degrees through a comprehensive student experience
- **Encourage continual feedback** to student employees for personal and professional development through annual face-to-face performance-based evaluations
- **Provide student employees with opportunity for advancement in pay** which assists with the affordability of a post-secondary education, as well as increased responsibility through completion of program criteria
- **Increase student employee overall satisfaction** of the student employment experience reflected in annual student employment satisfaction survey results.[137]

[132] Information downloaded from: "Promising and Practical Strategies to Increase Postsecondary Success: Academic Vital Signs Program: Turning Health Care Center Medical Visits into Referral Opportunities for At-Risk Students." U.S. Department of Education, p.3. http://www.ed.gov/college-completion/promising-strategies/tags/Retention?page=2

[133] "About Northwest." http://www.nwmissouri.edu/aboutus/about.htm

[134] "Northwest Facts | Northwest." http://www.nwmissouri.edu/facts/

[135] "Career Pathing | Student Employment | Human Resources | Northwest." http://www.nwmissouri.edu/hr/student/aboutcareerpathing.htm

[136] Ibid.

[137] Bullet points taken verbatim from: "Northwest Missouri State University: Student Employment Career Pathing Program." U.S. Department of Education. pp.1-2. http://www.ed.gov/college-completion/promising-strategies/tags/Retention?page=2.

A Student Employment Advisory Board, consisting of representatives from the administration, university human resources, the Student Employment Program, and outstanding student employees and supervisors, was created to oversee the Career Pathing Program's implementation. The board first established criteria for advancement within the Career Pathing Program. In order to be eligible for advancement, student employees must:

- Work within the same department for both a fall and spring trimester;
  - If a student begins employment later in the trimester but still completes three training and development sessions for that trimester, he/she will still be granted credit for the full trimester
- Attend at least three of eight personal and professional development opportunities per trimester (students are paid for time spent in attendance); and
- Must have an annual satisfactory performance evaluation completed by their supervisor.[138]

The board also conducted meetings with relevant university financial institutions such as the Financial Assistance and Payroll offices to resolve issues such as increased wage rates' effects on financial assistance packages and special software/programming necessary to implement the Career Pathing Program electronically. Finally, 10 student employment programs were chosen as pilots for the Career Pathing Program.[139]

The Career Pathing Program offers strictly voluntary employment development training sessions for its student employees, who are compensated for the time spent in training; sessions can last anywhere between 45 to 90 minutes based on topic or presenter. Some sessions are more informal and personal meetings with workers within the Student Employment Program while the Student Employment hires professional speakers for other events. Prominent community members are invited to participate in the sessions for a fee; this is intended to allow students to work with people with employment experience. [140]

Once student employees serve for one year in the same department, complete three trainings per trimester and participate in a performance evaluation with their supervisor, their work performances are reviewed and reported to the Office of Human Resources as either satisfactory or dissatisfactory. If work performance is satisfactory, a student employee is eligible for a $0.25 per hour wage increase for the next trimester. The same wage increase requirements can be repeated for an additional $0.25 increase each year of service.[141] A new position title accompanies each wage increase – the degrees of wage and title advancement are listed below:

[138] Bulleted list taken verbatim from: Ibid., p.3.
[139] Ibid., p.4.
[140] "Student Employment Career Pathing Program Brochure: Personal and Professional Development Opportunities Spring 2010." Northwest Missouri State University Student Employment Career Pathing Program, 2010.
[141] "Career Pathing | Student Employment | Human Resources | Northwest," Op. cit.

Figure 2.6: Degrees of Wage and Title Advancement at NMSU

Level	Title	Wage Increase	Example
Level I	Student Employee	Starting Salary	$7.25
Level II	Student Assistant	Pay increase of $0.25	$7.50
Level III	Student Associate	Increase another $0.25	$7.75
Level IV	Student Manager	Increase another $0.25	$8.00

Source: U.S. Department of Education[142]

Some known benefits of NMSU's Career Pathing Program include fulfillment of the majority of the program objectives, particularly in increased student retention.[143] Quantifiable results of the program include an increase in overall student employee satisfaction according to surveys and a three-year analysis showing that active student employees had not withdrawn from the university. The program has even been benchmarked by a number of higher education institutions in the U.S. and England.[144]

NMSU's Career Pathing Program directors noted that one particular challenge of the program had been communication. Since only student employees who complete the program may benefit from wage advancements, many student employees did not know of the program's existence or how it worked. To resolve this issue, an email with information on the Career Pathing Program is sent out to all employees at the beginning of every trimester.

ST. AMBROSE UNIVERSITY

St. Ambrose University (SAU) is a private, Catholic, liberal arts college located in Davenport, Iowa. Approximately 16.5 percent of the student body identify themselves as part of a minority group.[145] SAU is focusing on increasing degree attainment and student success by implementing new retention and persistence initiatives and enhancing existing programs.[146]

One of SAU's recently established retention programs is the **New Student Seminar**, a one-credit, extended orientation course that nearly all first-year students enroll in, fostering an environment to help new students successfully transition to SAU and instill within them a sense of academic community.[147] The course is guided by the following list of goals that serve to increase first-year retention:

- Promote academic success;
- Help students develop a social and personal connection to SAU;
- Facilitate thoughtful exploration of interests, majors, and careers; and

[142] "Northwest Missouri State University: Student Employment Career Pathing Program," Op. cit., p. 4.
[143] "Northwest Missouri State University: Student Employment Career Pathing Program," Op. cit.
[144] Ibid., p.5.
[145] "Quick Facts :: St. Ambrose University." http://www.sau.edu/About_SAU/Quick_Facts.html
[146] PhD, T.S.-M. and S. Erkel. "Promising and Practical Strategies." p. 1. http://www2.ed.gov/documents/college-completion/new-student-seminar.pdf
[147] Ibid., p.2.

- Instructors are free to develop an additional fourth goal, based on their expertise and interests.[148]

In 2011-2012, SAU piloted the **Making Achievement Possible (MAP) Works** survey in order to gather data on the school year's first-year cohort and use the evidence to guide future retention strategies. The web-based survey is delivered to first-year students four times a year and measures students on a number of research-based factors such as "their academic and social integration to campus, entering skills and abilities, and expectations of their college experience."[149] After completing the survey, students receive a detailed report of their individual strengths and weaknesses in relation to their college experience; faculty and staff connected to the students receive similar information and key points to focus on in intervention efforts.[150] SAU has seen a lot of success using MAP-Works as the data has helped them target their retention efforts towards further understanding points of student needs and distress. For instance, the University was awarded the 2012 MAP-Works Excellence Award for outstanding implementation and marketing of the program.[151]

SAU has additional programs in place to help situate new students and increase student involvement on campus, which in turn can lead to increases in student retention. SAU's FirstBook program distributes a specific piece of literature to its incoming freshman class and engages the students in applying the ideas found in the literature to their everyday lives. The program is promoted as a tradition at SAU where first-year students learn the importance and value of liberal arts and are expected to ask questions about the First Book and take action in reflection of the book. A different FirstBook is selected for every school year and is intended to engage students in the university community.[152]

[148] Bulleted list cited verbatim from: Ibid., p.4.
[149] PhD and Erkel, Op. cit.
[150] Ibid., p.2.
[151] Ibid., p.3.
[152] "First Book :: St. Ambrose University." St. Ambrose University. http://www.sau.edu/FYE_and_SYE/First_Year_Programs/First_Book.html

APPENDIX A: INTERVENTION STRATEGIES AT PAUL SMITH'S

This appendix presents the possible intervention approaches at Paul Smith's that students may access. They are typically reserved for students who have triggered an Action Flag and require dedicated support.

Figure A.1: Comprehensive Academic Intervention Strategies

Type of Outreach	Population	Point of Identification	Key Intervention Strategies
Targeted	1) Transitional	Admissions Process	▪ **Welcome Letter** at acceptance from Academic Success Director with overview of program which lasts 3 semesters. ▪ **Meeting** with Academic Success Counselor at Summer Orientation. ▪ **High Academic Risk Flag** raised for semester. ▪ **Weekly meetings** with academic success counselor focusing on time management, organization and strategies to improve academic success ▪ **Connecting students** to other support services including tutoring, Supplemental Instruction, Health Services, Financial Aid, Student Accounts, and Career Services. ▪ **Pay-for-Performance scholarship** incentive provides opportunity to earn graduated scholarship ($500-$3,000 per year) by achieving and maintaining academic success.
	2) Academic Recovery Program	Academic Probation or Reinstatement from Suspension	▪ **Academic Probation Flag** raised for semester. ▪ **Advocate assigned** for regular meetings during semester and to help student develop Academic Recovery Plan. ▪ **Required First Week Meeting** to develop and sign Academic Recovery contract including required attendance, tutoring, workshops, and/or other options. ▪ **Academic Success Plan** developed to guide the student to establish goals which can be revisited throughout the semester (see Appendix C). ▪ **Weekly required meetings** with advocate. ▪ **Suspension for Non-Compliance**--non-compliant students flagged with Urgent Flag indicating a possible suspension. Requires meeting with the Academic Success Director toaddress the concerns. ▪ **Pay for Performance Scholarship**—students on probation who achieve Dean's List can earn $500 scholarship for next semester.

Type of Outreach	Population	Point of Identification	Key Intervention Strategies
Early Outreach Program	1) CSI Risk Factors	5 or more risk factors on Noel Levitz College Student Inventory	▪ **CSI Risk Factor Flag** raised keeping student on radar of their Success Network. ▪ **Academic Success Counselor Outreach** at start of each semester (see Appendix D). ▪ **Advisors** meet with all new students and review CSI report and suggest strategies for success.
	2) High Risk Entering Profile	Predictive Modeling report generated from Institutional Research Office	▪ **High Academic Risk Flag** raised at the start of semester. ▪ **Academic Success Counselor** outreaches to each student to encourage them to participate in the Early Outreach Program. ▪ **An Academic Success Plan** (Appendix C) is developed with students who participate with an option for regular follow-up meetings during the semester.
	3) All Students with Early Alert Survey Flags	Early Alert Survey – Week Four	▪ **Informational Outreach:** Automated e-mail to student for Low Grade, Attendance Concern, and Missing Work Flags with information on next steps to take. (see Appendix A) ▪ **Personalized Prioritized Outreach:** Students with 3 and 6 flag warnings prioritized for outreach. Academic Success Team meets to coordinate personal outreach attempts (mail merge, Starfish "To Do") to encourage student to meet and seek academic support. ▪ **Support Meeting(s):** Responding students meet with Success Counselor to develop plan to get back on track. ▪ **Clearing Flags** and commenting on results of intervention meetings are key to establishing communications loop with faculty and developing faculty trust in the process. Faculty members can raise the concern again if progress is not made.
	4) All Students with Midterm grades below C	Midterm Grade Report	▪ **Informational Outreach:** Automated e-mail to student for each grade below a C contains information on next steps and academic support services who can help. (see Appendix A) ▪ **Personalized Prioritized Outreach:** Students with 3 and 6 flag warnings prioritized for outreach. Academic Success Team meets to coordinate personal outreach attempts (mail merge, Starfish "To Do") to encourage student to meet and seek academic support. ▪ **Support Meeting(s):** Responding students meet with Success Counselor to develop plan to get back on track. ▪ **Clearing Flags** and commenting on results of intervention meetings are key to establishing communications loop with faculty and developing faculty trust in the process.

Type of Outreach	Population	Point of Identification	Key Intervention Strategies
	5) All Students	Continuous Monitoring	▪ **Continuous monitoring** throughout semester. ▪ **Prioritized Outreach** based on 3- and 6- flag warning and other Action Flags ▪ **Outreach Process** and results same as above.
Voluntary Support	All students	Student self-identifies and seeks supports	▪ **Inform students** of program and opportunity for academic support provided through the academic success center, first year seminar classes and connections made through the early outreach program. ▪ **Volunteering students** often join in response to earlier outreach or established relationship from previous semester's outreach attempts. ▪ **Develop Academic Plan with** Academic Success Counselor during regular meetings. ▪ **Connect Students** to other support services including tutoring, Supplemental Instruction, Health Services, Financial Aid, Student Accounts, and Career Services.

Source: Paul Smith's College and the U.S. Department of Education[153]

[153] Taken from: Taylor and McAleese, Op. cit., pp.10–11.

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4401 Wilson Boulevard, Suite 400
Arlington, VA 22203
P 202.559.0500 **F** 866.808.6585
www.hanoverresearch.com