A PLAN FOR EXCELLENCE:
ENHANCING UNDERGRADUATE EDUCATION AND STUDENT SUCCESS

Retention Working Group
Colorado State University

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EXECUTIVE SUMMARY

Undergraduate student retention and graduation rates are critical measures of the quality of a university's educational experience. As Colorado State University moves to "set the standard for higher education," action across a broad range of areas in the University will be necessary to improve retention to graduation.

At present Colorado State outperforms *U.S. News and World Reports* prediction of university graduation rates by 6 percent. Surpassing these predictions is a tribute to the institution and its faculty, staff, and students. However, even as the university outperforms national predictions based on the level of student academic preparedness on entry and the level of university financial resources, our current first-year retention rate of 82% and six-year graduation rate of 63% place us in the lower half of our peer group. Since neither the freshman retention rate nor the six-year graduation rate has changed significantly within the last six years, increasing these rates requires substantial commitment on the part of the institution.

National retention research and practice reveal that significant increases in retention and graduation rates are the product of a network of coordinated, systematic strategies aligned in support of a high quality educational experience. No single program or collection of unconnected strategies will produce meaningful change. Improvement requires a "web of interlocking initiatives" (Kuh, 2005) that engage many students in profound ways and increase the quality of the undergraduate experience.

These principles guide the effort:

- Improved retention rates are a by-product of investing resources, energy, and educational and administrative skill in talent development and institutional excellence.

- The most effective strategies are those that enrich the educational experience.

- Comprehensive, sustained strategies produce significant results; isolated efforts produce only marginal results.

- All retention initiatives should be conceived and implemented with attention to the diversity of students served by the University.

- Academic Affairs and Student Affairs must operate in close partnership to achieve results.

- A powerful and nimble data analytic capacity is one of the most important forces for educational renewal and innovation. Data are critical to measuring progress, focusing discussion, and propelling change.

The Retention Working Group Report recommends that the University implement a comprehensive plan characterized by:

➢ enriched opportunities for learning and engagement

➢ heightened expectations for students to take advantage of those opportunities and graduate in a timely manner

➢ increased capacity for data collection and analysis to inform retention strategy and drive continuous improvement.

More specifically, the report recommends the University undertake strategies and initiatives in the following areas:

- Values. Articulate and act on an institutional value that emphasizes:

➢ The University's commitment to creating opportunities for exceptional academic experiences – opportunities that combine intellectual challenge and growth with personal enrichment and development – across the breadth of the university

➢ The University's commitment to establishing a community-wide culture of high expectations for student involvement and success.

- Structure and Basic Systems. Create structures to promote and sustain retention improvement while enhancing and improving basic systems that promote student success across the following areas:

  o Teaching and Learning: Promote pedagogical innovation and the systematic redesign of core, foundational, and gateway courses; support quality teaching; and increase opportunities for active and experiential learning.

  o Academic Advising: Ensure quality advising through appropriate training, evaluation, incentives, and resources, and consider new structures for delivering advising.

  o University Learning Center: Establish a learning center at the core of campus that collects and coordinates academic support services, promotes active learning, and operates in partnership with the Institute for Learning and Teaching.

  o Academic Planning: Establish a system that requires students to develop long-term (two- and four-year) plans with support from their advisors. Develop benchmark course indicators for monitoring students' progress toward their degree. Institute a process for anticipating course demand and eliminating bottlenecks that impede students' progress in their major and toward degree.

  o Departmental Retention Efforts: Involve departments in planning and implementing strategies at the unit level to promote retention and student success. Make departmental-level retention data available to unit-level decision-makers. Expand undergraduate research, service-learning, and leadership

development opportunities to increase students' involvement with faculty and with applied learning outside the classroom.

- o Psychosocial Development: Identify and address the non-academic factors that affect retention. Expand mentoring programs, and utilize student employment to promote student engagement and career development.

- Increase support for students during their first two years. More particularly:

  - o Increase capacity to provide learning community experiences for students who reside on and off campus; develop distinctive opportunities for mid-range index students and students seeking to explore majors and careers; rename and reconfigure open option categories; and assess and enrich the transition experience for first-year students.

- Provide proactive support for particular populations.

  - o Create mechanisms to intervene proactively with students experiencing or likely to experience difficulty; enhance early warning systems; create advising and corrective programs for students on academic probation; examine academic standards in relation to their effect on student performance and retention; examine relationships between financial aid, educational costs, and retention; and expand "pipeline" and "bridge" programs.

Efforts to improve retention and graduation rates are critical to the University's commitment to set the standard for higher education and to enrich the undergraduate learning experience. As such, they require the University's focus, creativity, and human and material resources. The Report recommends that planning and implementation processes for retention improvement be set in motion before the end of the spring 2006 semester, so that actions to improve student retention and educational quality proceed without delay.

RECOMMENDATION

SUMMARY

The comprehensive retention plan for Colorado State supports the University's strategic goal of setting the standard for higher education. National retention research and practice reveal that significant increases in retention and graduation rates are the product of a network of coordinated, systematic strategies aligned in support of a high quality educational experience.

The proposed action plan has three interrelated parts, three "pillars" supporting institutional excellence:

I. CREATE OPPORTUNITIES FOR EXCEPTIONAL EDUCATIONAL EXPERIENCES ACROSS THE BREADTH OF THE UNIVERSITY

An exceptional academic experience is one characterized by a wealth of opportunities to combine intellectual challenge and growth with personal enrichment and development.

II. CREATE A COMMUNITY-WIDE CULTURE OF HIGH EXPECTATIONS FOR STUDENT INVOLVEMENT AND SUCCESS

If the first pillar is the availability of exceptional educational experiences across the University, the second pillar is a culture of high expectations for intellectual and personal engagement. This element of the plan will require a significant change in campus culture. It calls for the creation of a community – including students, faculty, and staff – committed to the achievement of student potential; an environment in which each student we admit takes advantage of the rich opportunities the University community provides; and one in which students expect – and are expected to –graduate as soon as possible after the completion of their fourth year.

III. REQUIRE DATA-DRIVEN PLANNING AND ADMINISTRATION

An organizational system designed to produce excellence in educational opportunity and foster high expectations for student engagement and success requires that we be able to identify what works and what doesn't. A powerful and nimble data analytic capacity is one of the most important forces for renewal and innovation. Data systems provide the informational currency for measuring progress, focusing discussion, and propelling change.

Setting the standard requires that all three parts of the plan are achieved. A connected set of strategies compose the infrastructural support for each of the pillars. Together, these strategies form the comprehensive action plan for increased retention to graduation.

FUNDAMENTAL RETENTION ASSUMPTIONS

- Retention efforts require University commitment and resources, sometimes in the form of institutional will, sometimes dollars, sometimes both. Retention must be seen as an *investment* that enhances the University's educational leadership and administrative efficiency by enhancing the quality of the educational opportunities it provides and by increasing the percentage of its students who take advantage of those opportunities and graduate in a timely manner.

- The most effective retention efforts are those that enrich the educational experience. For this reason, retention efforts are connected to fundamental educational concerns of the University.

- Comprehensive, sustained strategies are required to produce significant retention results. Isolated efforts produce only marginal results.

- All retention initiatives should be undertaken with explicit attention to the diversity of students served by the University.

- Data is critical to retention improvement. Comprehensive retention planning and implementation require data that are readily available and usable by decision makers at the central and unit level.

SUMMARY OF RECOMMENDED STRATEGIES

I. ARTICULATE VALUES AND CREATE STRUCTURES THAT PROMOTE AND SUSTAIN RETENTION IMPROVEMENT

- Create a culture of high expectations regarding the success of students and the university's commitment to excellence in undergraduate education.

    o Expect students to graduate in four to five years.

    o Expect students to take advantage of an enhanced undergraduate experience.

- Recognize that academic and psychosocial factors together influence students' persistence decisions, and involve the Student Affairs and Academic Affairs Divisions in collaborative retention strategies.

- Create an infrastructure to promote and sustain retention improvement, with primary responsibility shared by the Vice President for Student Affairs and Vice Provost for Undergraduate Affairs.

- Appoint a campus-wide retention committee to coordinate retention efforts.

- Assign responsibility for implementation of individual retention strategies to appropriate units.

- Promote enhanced access, expertise, and capacity to do timely retention data analyses at both central and unit levels.

II. ENHANCE AND IMPROVE BASIC SYSTEMS THAT PROMOTE STUDENT SUCCESS

Teaching and Learning

- Promote pedagogical innovation and systematic redesign of core, foundational, and gateway courses.

- Create incentives for course redesign, and implement the incentive process through the Institute for Learning and Teaching.

- Assure that highly effective teachers are assigned to core, foundational, and gateway courses.

- Provide increased supplemental instruction targeted at core, foundational, and gateway courses.

- Provide high quality professional development that supports teaching improvement.

- Increase opportunities for active and experiential learning, including, for example, undergraduate research and service learning.

- Make quality teaching a more prominent part of evaluation, promotion, and tenure considerations.

Academic Advising

- Ensure that sufficient resources are dedicated to advising, and evaluate the effectiveness of departmental advising and advisors.

- Explore the costs and benefits of expanding the professional advisor system within each college to ensure thorough and effective advising for all students.

- Expand the use of professional advisors for students' first two years and to monitor progress toward graduation. This arrangement may provide more effective advising concerning major exploration and choice and better monitoring of progress toward graduation, while at the same time freeing faculty to focus on mentoring and promoting independent projects and independent learning.

- Assure that quality advising and mentoring across the undergraduate experience are recognized and rewarded as part of annual evaluation process and in tenure and promotion considerations.

- Provide high quality training for new advisors and departmental staff and on-going training for continuing advisors and staff. Assign the responsibility for training and updating to an appropriate unit.

- Increase capacity for providing quality advising to undecided students.

- Include career development as a part of the first-year advising process, and connect students to career resources.

- Explore the possible value of admitting students without declared majors, recognizing potential impacts on both recruitment and retention.

University Learning Center

- Establish a university learning center at the core of campus.

- Include existing academic support services either as residents of the learning center or as satellite service providers.

- Create programs to promote active learning outside the classroom and academic enrichment experiences that operate throughout the day and evening. The Center would also be used to provide Supplemental Instruction, learning assessment, coordinated training for tutors, programs for students experiencing academic difficulty, and services for high ability students.

- Create a position that will combine coordination of undergraduate research opportunities with providing advising for students on prestigious scholarships. Locate this position in the university learning center once the Center is operational.

- Locate the newly formed Institute for Learning and Teaching within the learning center to promote partnerships between the two centers and support their shared interest in the quality of learning.

Academic Planning

- Develop a student academic program planning process that requires students and their advisors to develop four-semester (for entering open option students) and four-year course plans (for declared students). Incorporate this planning process as an essential component of the first semester advising process. Students would be expected to follow their semester course plan and changes would have to be made in conjunction with their academic advisor.

- Establish key benchmark course indicators in each program that mark timely progress toward completion of the degree (e.g., at 30-, 45-, and 60-credit levels). Data from the semester course plans could be used to create predictive course demand data for each semester.

- Collect data and develop a predictive model to anticipate and respond to course demand for the purpose of identifying and addressing bottlenecks that impede students' progress toward their degrees.

- Systematically link resources for academic units to their commitments for providing core, foundational, and gateway courses, with particular emphasis on courses that are part of the benchmarking plan.
  - Evaluate the use of differential tuition to eliminate course bottlenecks and reduce the need to control access to particular majors.

Departmental Retention Efforts

- Assure that departmental performance plans include and support the University retention goals, and evaluate departmental/unit leadership on retention efforts and outcomes.

- Make centrally-generated department-level retention data readily available and user-friendly in order to enhance departmental capacity to conduct outcomes assessment.

- Expand undergraduate research, service-learning, and leadership development opportunities to increase students' involvement with faculty and with applied learning outside the classroom.

Psychosocial Development

- Identify and address non-academic issues that affect retention.

- Expand mentoring programs and connect them to retention and assessment planning.

- Expand student employment to promote student engagement and career development.

III. INCREASE SUPPORT FOR STUDENTS DURING THEIR FIRST TWO YEARS

- Increase capacity to provide learning community experiences for students who reside on and off campus.
  - Provide a range of learning community options, emphasizing those options that provide structure to the first years and have strong curricular components.

- Develop a career discovery- and major selection-focused first year program for students in Open Option programs. Create academic interest clusters within CASA advising and develop learning communities around these Academic Interest Clusters. Foster the selection of a major by the end of the third semester and no longer than the end of the fourth. Ensure that there is access to majors for students within this group who demonstrate academic success.

- Create distinctive and visible opportunities, both academic and co-curricular, for mid-range Index students.
  - Explore the development of a "Colorado State Scholars Program" for selected students with indexes between 114 and 128. Create learning communities (possibly within a residential setting), design academic first year seminars by academic interest clusters, and/or provide enhanced experiential learning opportunities for these students.

- Rename/reconfigure all university open option categories under a new name and concept (for example, the "University Science and Letters Program").

- Charge the Retention Committee with making a recommendation on whether college open option programs should be incorporated into the reconfigured university-level structure.

- Assess and enrich the transition experience for first year students.
  - Assess current first-year seminar models, evaluate alternative models, and consider how first-year seminars can be strengthened and expanded to serve more students.
  - Expand group mentoring programs directed to first year students.
  - Enrich the Ram Welcome program to provide students with greater skills, knowledge and expectations to facilitate their successful transition to the University.
  - Increase the participation in the study skills and transition skills workshops offered in the fall semester.

IV. PROVIDE PROACTIVE SUPPORT FOR PARTICULAR POPULATIONS

- Create mechanisms to intervene proactively with students experiencing or likely to experience difficulty.

- Enhance the Early Warning System. Develop a profile of "stayers" and "leavers," and increase the skills of faculty, staff, and resident assistants involved with a "taking stock" program to intervene effectively with such students.

- Create a system for reporting mid-semester grades and progress for first year (new freshman and new transfer) students.

- Create a more intentional, proactive advising and corrective program for students who fall below 2.0 in a particular semester and those on academic probation.

- Examine University policies dealing with academic standards and determine if they support positive retention and advance student success before it is too late for students to make the needed changes to advance toward graduation.

- Identify specific relationships between financial aid, educational costs, and retention.

- Expand pre-college programs such as the Bridge Scholars Program, and increase such programs' centrality to campus academic support strategies.

- Expand "pipeline" programs that operate in partnership with schools and communities to prepare students for entry and success in higher education.

INTRODUCTION

> *Just as no single experience has a profound impact on
> student development, the introduction of individual programs
> or policies will not by themselves change a campus culture
> and students' perceptions of whether the institution is
> supportive and affirming. Only a web of interlocking
> initiatives can over time shape an institutional culture that
> promotes student success (Kuh, 2001-2002, p.30-31).*

The rates of retention and graduation of students from colleges and
universities have become issues of ever greater interest to the higher
education community and the nation. These rates have come to be
associated with fundamental issues of institutional health, including
educational quality, financial condition, and public accountability. These
issues are no less important to Colorado State University than to other
colleges and universities.

The purpose of this paper is to provide background and stimulus for
campus discussion and action around retention enhancement. To this
end, the paper summarizes research and theory in the retention field,
identifies student and institutional factors related to retention and attrition,
reviews patterns at other higher education institutions, and examines
patterns at Colorado State. Finally, the paper suggests directions for
campus planning efforts and identifies specific recommendations and
recommends adoption and implementation of a number of priority
retention strategies.

Over the past thirty years, a substantial body of theory and research has been developed concerning student departure and success. Three theories have predominated over this period of time:

- <u>Vincent Tinto's Theory of Student Departure</u> (1987, 1993). Operating from a sociological framework, Tinto emphasizes that student departure decisions are voluntary. The decisions are made within a context of pre-college experiences and characteristics, but are conditioned by the extent to which students' experiences while in college produce integration with both the academic and social dimensions of the campus. To the extent that integration is substantial on both dimensions, students are more likely to stay in college.

- <u>Astin's Student Integration Model</u> (1977a, 1977b). Astin forwards the idea that "student involvement with faculty, academics, and peer groups are critical to student success, and that the environment that best stimulates and nurtures student growth will be most effective for students. Students make choices about their investment of time and energy in campus and classroom activities. Institutions that are more effective in producing student success will be those that structure their environments to induce student choice in the direction of such involvement.

- <u>Bean's Psychological Model of Retention</u> (Bean, 1980; Bean and Eaton, 2001). Bean states that individual psychological processes are central to retention decisions, but that institutions can design systems and programs that influence those processes in such a way that students integrate academically and socially at the institution and persist and graduate.

Even as retention research has advanced, classic theory has demonstrated impressive power in defining the primary tenets of the field. Still, tests of theory have proliferated and improved, meta-analyses have become more substantial, and research has differentiated among institutional types, subpopulations, and issues. As retention theory and research have advanced, a number of general insights stand out:

General Understandings:

- Student persistence/departure behavior is complex.

- Retention is a function of characteristics students bring with them, institutional characteristics, and the interaction of students and the institution (Tinto, 1993).

Pre-College Student Factors:

- Experience in college is conditioned by characteristics and experiences that students bring with them. These factors include: student goals and commitments, academic preparation levels, expectations, gender, ethnicity, achievement levels, experience with higher education, parent income level, and parent education level, among others (Tinto, 1993; Nora, 2003).

Institutional Environments:

- Once students enter a college or university, organizational systems and environments are critical in affecting retention likelihood (Berger, 2000, 2001).

- Institutions with similar levels of "inputs," understood as the quality and characteristics of entering students, and similar institutional characteristics may vary considerably in terms of retention and graduation "outputs." This variance is best explained by differences in the environments, structures, philosophies, and programs in place at those institutions. (Muraskin and Lee, 2004; Mortenson, 1997; Education Trust, 1005a). Institutional characteristics and strategies, then, affect students' chances of success.

- Intentional planning is required to effect changes in the institutional environment to enhance retention. George Kuh calls this "creating conditions that matter" for student success in college (Kuh, 2005). Planning and implementation, to be effective, will necessarily involve the whole campus (Berger, 2001).

- Institutional mission and philosophy make a difference. A philosophy of "talent development" (i.e., the belief that all admitted students have talent that, if developed, will allow them to graduate) is supportive of student success (Kuh, 2005).

Academic and Non-academic Factors:

➢ Students' success is attributable to a combination of academic and non-academic factors. These have been described as functions of academic and social integration (Tinto, 1993), academic and non-academic factors (Habley and McClanahan, 2005), or cognitive and non-cognitive factors (Tracey and Sedlacek, 1985). Sedlecek and Tracy (1985) find that for non-traditional populations, certain non-cognitive factors predict success with greater accuracy than traditional measures such as standardized test scores.

➢ Academic Affairs (including the faculty and the curriculum), and Student Affairs (including the staff, services, and co-curriculum) play essential roles in retention (Cuseo, 1988; Kuh, 2005). A strong partnership between Academic and Student Affairs is necessary for retention improvement (Habley and McClanahan, 2005).

➢ Engagement in learning is critical to student success. Learning takes place both in and outside the classroom (Tinto, 1998, Kuh, 2005).

Campus Involvement:

➢ Involvement with in-class and out-of-class campus activities is generally associated with greater persistence. (Astin, 1985).

➢ Involvement with faculty both in and out of class is associated with greater persistence (Pascarella and Terenzini, 2005). Involvement with mentors, whether faculty or staff, is associated with greater persistence.

Diverse Populations:

➢ Subpopulations within institutions experience the institution differently, have different needs, and perform differently with respect to retention/graduation (Rendón, Jalomo, & Nora, A., 2000).

- Students from first generation college backgrounds (those whose parents did not attend or complete college) enter college, persist, and graduate at substantially lower rates than students whose parents attended college, even after accounting for academic preparation levels (U.S. Department of Education, 2001).

- Students from low income backgrounds enter college, persist, and graduate at substantially lower rates than students from higher income backgrounds, even after accounting for academic preparation levels (Choy, 2002; Alerkheim, 1998). However, among institutions that serve high proportions of low income students, some institutions have considerably higher retention rates than others (Muraskin and Lee, 2004; Mortenson, 1997; Carey, 2005).

- Among students with financial aid (limited family and/or personal resources), the amount and kind of financial aid, and the ways in which financial aid are delivered produce different retention effects. Generally, students with adequate financial aid perform as well in terms of retention as students without aid, though it may take them longer to graduate (St. John, Cabrera, Nora, and Asker, 2000; Thayer, 1997).

- Students from underrepresented ethnic backgrounds persist and graduate at rates lower than white students (Harvey and Anderson, 2005), even when accounting for academic performance levels. (Hurtado *et al.*, 1998).

- In general, students from underrepresented economic and ethnic/racial backgrounds do not have needs of a different kind, but their needs may be of different intensity (Pascarella and Terenzini, 1991).

- Students from underrepresented backgrounds may succeed at greater rates when:

    - They have connections to positive aspects of family and community outside the campus (Rendón, Jalomo, & Nora, 2000).
    - They experience support from and even belong to "enclaves" of students whose experiences approximate their own (Kuh and Love).

- They experience positive orientation experiences and associations with peers (Hurtado and Carter, 1997).
- They receive "validation" from the environment, and from significant representatives of the institutional environment (Rendón, 1993).

<u>Central Themes</u>

Overall, the most significant lessons from the body of retention literature are these:
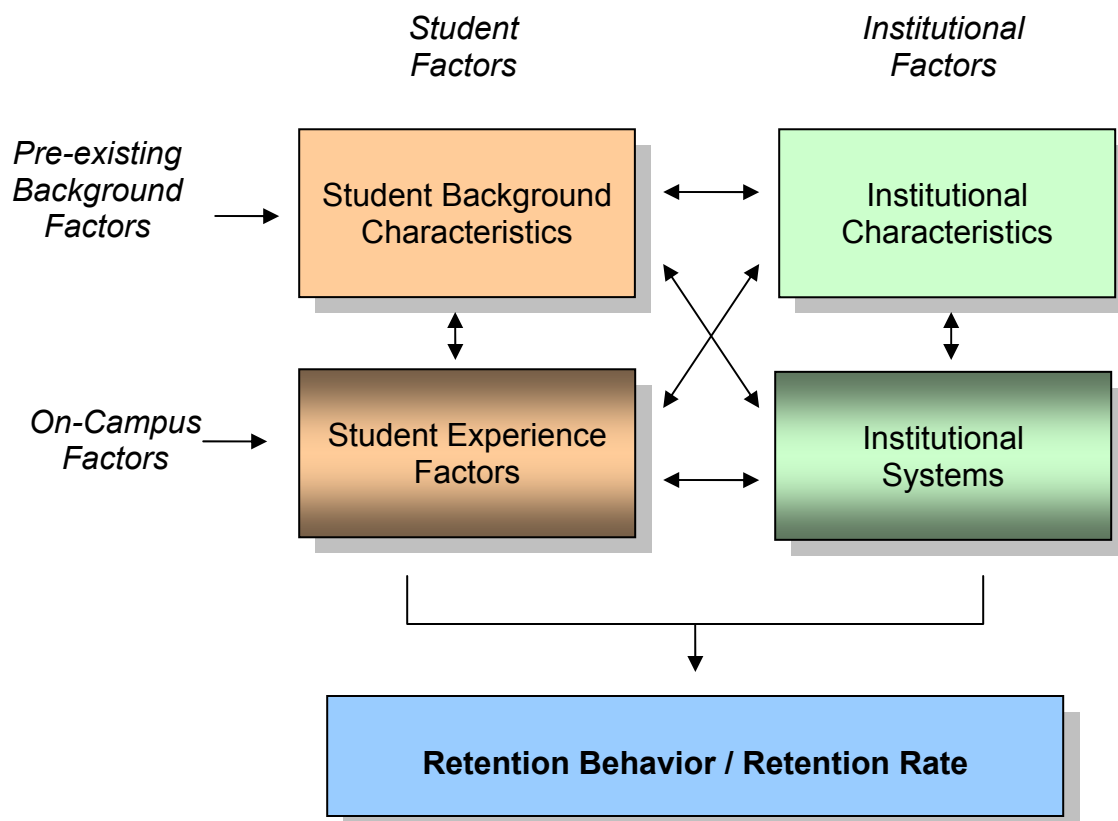
- ❖ Institutional environments make a difference in student retention, and those that convey high expectations in terms of both challenge and support are likely to retain students at higher levels.

- ❖ Students' success is dependent upon both academic and non-academic factors.

- ❖ Student engagement with both academic and social aspects of the campus is critical. A sense of belonging and community needs to develop within both academic and social contexts.

- ❖ Academic Affairs and Student Affairs play essential roles in retention, and strong partnerships between Academic and Student Affairs are necessary.

- ❖ Different populations, including those who are of color, from lower income, or from first generation backgrounds, or who are of non-traditional age or non-traditional experience, are affected differently by the environment and may have different levels of need.

- ❖ Students succeed best when they perceive the campus to be "student-centered;" that is, operating in their best interests, and valuing them as assets.

OPPORTUNITIES FOR INFLUENCING RETENTION-ENHANCING FACTORS

Fundamentally, retention decisions are the result of students' assessments of the costs and benefits of staying over those of leaving. For each student, the complex of factors comprising the cost and benefits are somewhat unique. The strategic issues, from an institutional point of view, are the identification of factors that are shared by many students and over which institutional activity will likely have influence, and the development or improvement of systems and programs to exert that influence.

Many retention models have been delineated to describe the complex relationships among very specific variables. Those models will not be repeated here. Rather, retention variables have been grouped into four broad categories. Both students and institutions have "background characteristics" that exist prior to students' entry to the campus. These background factors condition some of students' on-campus experience. But their on-campus experience is more directly influenced by students' choices and performance in the University environment and by their interaction with campus systems. Ultimately, persistence behaviors and retention rates are a product of all of these factors and their interaction with one another.

Student Factors   *Institutional Factors*

Pre-existing Background Factors → **Student Background Characteristics** ↔ **Institutional Characteristics**

On-Campus Factors → **Student Experience Factors** ↔ **Institutional Systems**

Retention Behavior / Retention Rate

As in all organizations, colleges and universities influence the behaviors and experiences of their members. That influence operates differently in the categories outlined below.

Student Background Factors:

Most student background characteristics are formed prior to their contact with college, so the opportunity to change those characteristics is minimal. Colleges can address background factors in two ways. First, colleges may act through recruitment and selection processes to influence the composition of pre-college factors among entering students, including such things as student demographic characteristics, pre-college experiences, and expectations of entering students. Second, institutions may choose to provide supplemental experiences or interventions to either enhance or mitigate the effect of pre-college factors on students' success.

Among the background characteristics identified most often with retention are such factors as:

- Goal Commitment (Tinto, 1993)
- Parent Educational Attainment (U.S. Department of Education, 2001)
- Socio-Economic Status (Corrigan, 2003)
- Academic Preparation (Tinto, 1993)
- Opportunity Orientation (Skinner and Richardson, 1988)
- Transfer, particularly from two-year colleges (Cabrera *et al.* 2003)
- Gender (Mortenson, 2005)
- Motivation (Habley and McClanahan, 2004)
- Academic Confidence (Habley and McClanahan, 2004)

Pre-college factors often affect students' knowledge of the collegiate environment and their preparation and/or predisposition to transition to and succeed in the environment. Several analyses of college retention across campuses utilize student background factors to predict retention rates (U.S. News and World Reports, 2005; Mortenson, 1997; OBIA, 2005a).

Institutional Background Characteristics

Much as retention can be predicted from student background characteristics, it can also be predicted from institutional characteristics. As in the case of student background characteristics, institutional background characteristics pre-date the entry of new students and are unlikely to change significantly in the short run. These include, for example:

- Institutional mission
- Admissions selectivity
- Average student preparation levels (e.g., ACT/SAT, high school grade point averages)
- Proportion of full-time versus part-time students
- Institutional financial resources

The Office of Budgets and Institutional Analysis (OBIA) has included institutional background factors in predicting the six-year graduation rates of CCHE and Internal peer institutions (OBIA, 2005a).

The opportunities for altering institutional background characteristics are limited. The University is not likely to change its fundamental mission and character or garner vast new resources in the short term. The influences of institutional background factors, therefore, need to be recognized as part of the context for retention. Within that context, there may be elements of the institutional character that can be emphasized as part of a retention strategy, but the essential characteristics will not change greatly in the near term.

On-Campus Factors Related to Student Experience

Once on the campus, students' experiences play a role in their eventual persistence or withdrawal. Students take initiative and have considerable control over some aspects of their experience, while in other cases they only react to circumstances that are largely outside their control. Some of the factors that have been identified in retention research for their relationship to retention outcomes include:

- Full or Part-Time Enrollment
- Grade Point Average, particularly in the first year
- Withdrawal from Courses
- On- or Off-Campus Residence

- Level of Academic Involvement
- Level of Social Involvement
- Study Skill Development
- Engagement with Support Systems
- Sense of Safety and Security

To the extent that college personnel are aware of the nature and quality students' experiences, they are in a position to address potential risk factors; however, data on student experience is not easily secured. One strategy for collecting such data is to conduct student satisfaction surveys. The Noel-Levitz organization has published summary results from their satisfaction surveys conducted on four-year colleges across the country. This list of top concerns from this survey reveals something about student priorities. Among the top four concerns, three related to issues of teaching and learning: academic advising, instructional effectiveness, and registration effectiveness.

The Noel-Levitz report (2005) also identifies areas of student dissatisfaction. Matching those items considered of greatest importance to students but producing lowest satisfaction yields a list of "challenges for institutions." Again, it is worth noting that while many items relate to out-of-class issues, four of the top six relate directly or indirectly to teaching and learning: ability to register for needed classes, tuition paid is a worthwhile investment, faculty are fair in their treatment of students, and faculty provide timely feedback.

This list does not necessarily reflect the realities of any single campus. It does, however, offer some clues as to students' experience with campuses nationally, and points to the campus systems that often cause difficulties for students. Student satisfaction surveys provide indicators both of the quality of students' experience on the campus, and the quality produced by their interaction with campus systems.

Student Priorities

Satisfaction factors from the Noel-Levitz 2005 National Satisfaction and Priorities Report for Four-Year Public Colleges and Universities, ranked in order of importance to students:

- Academic Advising
- Instructional Effectiveness
- Safety and Security
- Registration Effectiveness
- Concern for the Individual
- Recruitment and Financial Aid
- Campus Climate
- Student Centeredness
- Campus Support Services
- Service Excellence
- Campus Life
- Responsiveness to Diverse Populations

Data were gathered from 104,324 students at 103 institutions.

Challenges for Institutions

Issues rated high in importance and high in dissatisfaction in the Noel-Levitz Student Satisfaction and Priorities Report (2005)

- Ability to register for classes I need with few conflicts
- Tuition paid is a worthwhile investment.
- Faculty are fair and unbiased in their treatment of individual students
- The amount of student parking space on campus is adequate
- Adequate financial aid is available for most students
- Faculty provide timely feedback about student progress in a course.
- Security staff respond quickly in emergencies
- This institution shows concern for students as individuals
- Parking lots are well-lighted and secure
- I seldom get the "run-around" when seeking information on this campus
- Financial aid awards are announced to students in time to be helpful in college planning
- Billing policies are reasonable

On-campus factors: Institutional Systems

Colleges influence (consciously or otherwise) the environment in which educational services are delivered and student experiences occur. This understates the problem in planning for retention, however, since institutional culture, processes, and activities have not always been developed with student success as the primary objective, and changes to institutional climate and processes require considerable skill, commitment, and resources.

Students interact with many campus systems in the course of their educational experience, and it is these systems that are critical to retention performance.   Examples of these systems include, among others:

- Teaching/Learning Systems
- Advising Systems
- Class Registration Systems
- Financial Aid Systems
- Social Interaction Systems
- Student Support Systems

Retention is often understood as a rate: the proportion of a student cohort that remains as compared to those who originally entered a college or university. What is at stake for an educational institution, however, is far more than a rate. Retention rates are a strong reflection of educational quality.

> *Though the intentions and commitments with which individuals enter college matter, what goes on after entry matters more. It is the daily interaction of the person with other members of the college in both the formal and informal academic and social domains of the college and the person's perception of evaluation of the character of those institutions that in large measure determine decisions as to staying or leaving. It is in this sense that most departures are voluntary. Student retention is at least as much a function of institutional behavior as it is of student behavior."* Tinto, 1987, p. 127, 177

Retention rates have claimed ever greater significance for external constituencies. Prospective students and their parents want to be assured that there is a strong likelihood of success, understood as achievement of a bachelor's degree, at the institution they would choose. Certainly, the greatest testimony on behalf of a college is the enthusiasm of a successful graduate, while the reputational damage from students who departed unhappily is difficult, if not impossible, to repair. State and federal governments have taken greater and greater interest in retention rates as measures of accountability to the public.

Internal interests in retention, however, are even more compelling. Some of those interests are financial, since every student who leaves must be replaced. Replacement costs relating to recruitment are simply the tip of the investment iceberg. Once a student enrolls, colleges commit substantial resources toward the education of each student.   Tuition and fees are but one representation of that commitment. In fact, the real cost of education is about three times the amount of tuition at U.S. schools once all subsidies, including the cost of the educational infrastructure covered by development, research, and others sources, are taken into account (Winston, 2005). It is this entire investment that is lost – both to the University and the student – upon early departure.

Though substantial, it is not the financial cost represented by attrition that is of greatest concern. Students are most likely to stay and graduate when they experience a challenging, stimulating, fulfilling, and supportive educational environment. It is the creation and sustenance of such an environment that is at the heart of campus concern for retention. Indeed, retention speaks to the most fundamental aims of institutions such as

Colorado State University. The University Draft Strategic Plan speaks to these aspirations when it commits the institution to "setting the standard for excellence in teaching," and "providing a distinctive educational experience" (Colorado State University Strategic Plan, 2006).

What has been learned over more than thirty years of retention research and study is that the very strategies that enhance the quality of the educational experience are those that increase retention. No simple administrative device, and certainly no lessening of standards, will produce retention gains. Concern for and action on behalf of retention serves the University's commitment to educational quality.

It has been observed that campus personnel, both faculty and staff, are more likely to attribute attrition to characteristics of students than to characteristics of the institution (Habley and McClanahan, 2004). Yet, it is the institutional environment, not enrolled students, over which the institution has the greatest influence. A number of analyses of national data (The Education Trust, 2005; U.S. News and World Reports, 2005; Mortenson, 1997) on four-year colleges and universities make it clear that given similar student quality and similar institutional resources, retention and graduation rates vary significantly among institutions. It is primarily the quality of the educational environment that accounts for the variance.

> Retention requires "…a commitment on the part of each and every member of the institution for the welfare, the social and intellectual growth, of all members of the institution." Tinto, 1987, p. 136.

Colleges and universities that seek to enhance their retention rates are likely to do so only by design. It is through genuine commitment and institutional engagement that change occurs, and through planning, analysis, implementation, and assessment that student learning and success, and retention rates, increase.

Retention literature provides a general guide for those who desire to improve the educational experience on their campuses. It remains for personnel at individual campuses to develop plans for change that respond to particular campus needs and strengths, and to implement those plans with attention to the unique dynamics of the college or university.

It is understandable that many campus administrators would opt for quick and simple strategies. In environments of constrained resources and competing demands, it is the quick and simple strategies that are most attractive. For those campuses that are committed to making more than marginal improvements in retention and educational quality, however, comprehensive planning is required.

A comprehensive plan will have several characteristics:

> *"Just as no single experience has a profound impact on student development, the introduction of individual programs or policies will not by themselves change a campus culture and students' perceptions of whether the institution is supportive and affirming. Only a web of interlocking initiatives can over time shape an institutional culture that promotes student success." (Kuh, 2001-2002, p.30-31).*

- It will have the support of the president and top campus leadership.
- It will develop broad consensus among campus groups.
- It will be multifaceted.
- It will be strategic, focusing on strategies that respond to priority needs.
- It will employ data as a means of driving planning and communicating with the campus.
- It will focus on big ideas that will have broad impact (Levitz, Noel, and Richter, 1999).

Plans should focus on the adequacy with which institutional systems respond to student characteristics and behaviors that are associated with departure, or "the nexus of student characteristics and institutional systems" (Habley and McClanahan, 2004). Where a factor (whether in students' backgrounds or in their experience) is found to have an association with attrition, planners should determine (1) whether a system exists to address that factor (mitigating its effects or enhancing students' abilities), and if it exists, (2) how effectively the system mitigates effects or enhances abilities.

The next sections of the report begin the examination of how retention theory and research can be operationalized to serve the interests of the Colorado State University community. First, the report highlights retention data and practices from

> **Steps in the Planning Process**
> (Lotkowski, *et. al.,* 2004)
>
> - Acknowledgment by the institution that improved retention is desirable.
> - Assembling comprehensive information about students, derived from multiple sources including ACT student records as well as other institutional student records, surveys, questionnaires, etc., to determine the academic and non-academic needs of individual students.
> - Assessing the availability of retention resources with respect to the needs to be addressed.
> - Reviewing and evaluating the efficacy of potential retention programs.
> - Putting areas of retention need in priority order (e.g., first-year orientation, summer transition programs, tutorials, skills-related workshops, mentoring).
> - Planning program execution.
> - Designing and implementing a retention program evaluation process.
> - Implementing the program.
> - Widely disseminating results from the program evaluation
> - Modifying the program as warranted.

other institutions. Next, the report reviews data analyses that have been conducted to identify retention patterns related to various student and institutional factors at Colorado State University. Finally, the report recommends action on priority strategies to increase campus retention and student success.

RETENTION AT PEER INSTITUTIONS

Retention is a national concern. Of those who begin college at a four-year institution, only 47% earn a degree within five years at the same institution at which they started. Another 13% transfer to other institutions and earn a degree from that second institution (Choy, 2002). The rate of five-year degree completion, then, is less than 50% within institutions, and about 60% between institutions.

The American College Testing organization (2005a) has been tracking retention and graduation rates for more than twenty years. Their data show that four-year colleges and universities have made little progress over that period in terms of first-year retention and graduation. The first-year retention rate measured for four-year public institutions in 2005 was 72.7%, and the five-year graduation rate was 42.3%.

Retention success varies by institutional type. Selective, public, Ph.D.-granting institutions, such as Colorado State University, showed an average first-year retention rate of 81.6% measured in 2005, and a five-year graduation rate of 52.3% (American College Testing, 2005b).

Tom Mortenson (1997) demonstrated that graduation rates vary widely among colleges. He developed a regression formula to predict graduation as a function of student college entrance exam scores, percent of full-time students, and other factors, and applied the prediction formula to 1100 four-year colleges to examine the extent to which institutions under- or over-performed in relation to that prediction. Mortenson's analysis dramatized the extent to which particular institutional environments tend to produce greater or lesser success for similar students.

> Retention Rates for Colorado State University
>
> Freshman Retention Rate (cohort entering 2004): 82%
>
> Five-Year Graduation Rate (cohort entering 2000): 58.6%
>
> Six-Year Graduation Rate (cohort entering 1999): 62.5%
>
> (Office of Budgets and Institutional Analysis)

The Education Trust (2005a) makes the point that "similar institutions aren't similar when it comes to student success." Developing peer groups from an 11-factor algorithm, the *College Results Online* Web tool generates graduation rate comparisons between similar institutions. In this analysis, Colorado State University ranks midway between its peers.

Graduation Rate Comparisons, Education Trust
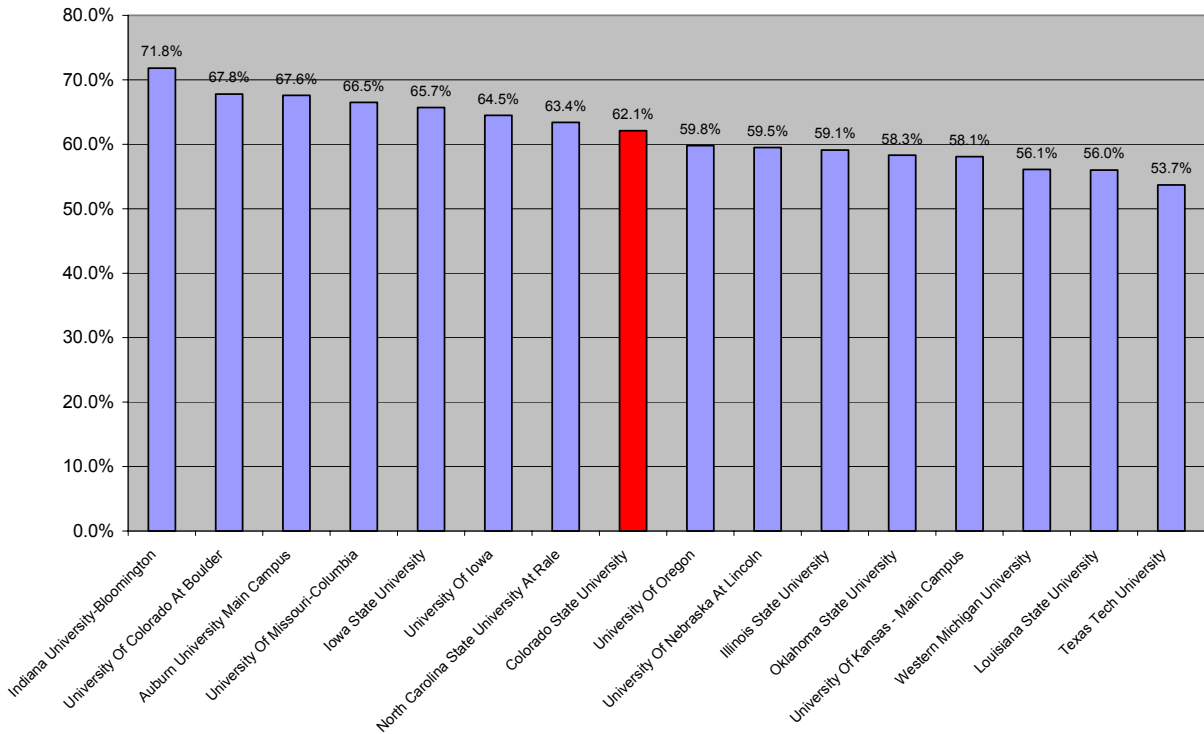
The Office of Budgets and Institutional Analysis (2005a) developed a six-year graduation model, using data from CSU Internal Peer and Institutional Peer institutions. In this model, the most influential factors predicting graduation rates are, in order: quality of students (ACT or SAT score), student commitment (proportion of part-time students), state and institutional support (general fund per student FTE), student/family income (proportion of freshmen receiving federal grant aid), and program diversity (size of total enrollment). The OBIA study estimates effects on graduation as follows:

Factor	Effect Direction	Unit	Effect on Graduation Rate
Student Quality (ACT/SAT)	Positive	1 ACT point or 30 SAT points	+1.3 percentage points
Student Commitment (part-time percentage)	Negative	10 percentage points increase in part-time	-4.0 percentage points
State and Institutional Support (general fund per student FTE)	Positive	$2,000 additional support	+1.0 percentage point
Income (student receipt of federal grant aid)	Negative	(unspecified)	(unspecified)

The OBIA study shows that Colorado State's graduation rate ranks in a tie for 9th in its 13-member Institutional Peer Group, and 9th in its 14-member Internal Peer Group. Accounting for the factors in the regression equation, however, CSU is exceeding its predicted graduation rate by 6.5 percentage points. The *U. S. News and World Reports* ranking (2005) also produces data on comparative graduation rates. That system shows that CSU exceeding its predicted graduation rate by 6 percentage points.

The Retention Working Group reviewed summary data on 37 institutions. The institutions included CSU's Institutional and Internal peer groups, a CSU peer group defined by the Education Trust College Results Online, and the Education Trust peer group defined for the University of Washington at Seattle. The summary data is shown in the first section of the Appendix.

The Working Group examined two institutions in greater detail. Observations about these institutions follow.

UNIVERSITY OF WASHINGTON AT SEATTLE

The Working Group studied information from the University of Washington Website and then visited the University's campus, meeting with a variety of campus leaders. The purpose of this exploration was to identify practices associated with enhanced retention and student

retention and success on the University of Washington campus that might be transferable to the Colorado State University setting. Among the insights gained were the following:

- The University has a substantial "retention infrastructure," meaning that it has implemented a number of far-reaching systems over a period of time. This infrastructure provides a network of support for students in their transition to and continuation at the University, and provides solid platform for the implementation of new retention strategies.

- One element of the infrastructure is a highly developed system for applying data to the analysis of problems and toward measuring effects of programs and interventions. One aspect of the data system is a database that has been created and made available in a user-friendly manner to campus decision-makers. Data has been used recently to examine retention issues such as course availability, unmet student demand for majors, transfer performance, and departmental-level retention information.

- Another element of the infrastructure is the existence of the Office of Undergraduate Education, an umbrella for a number of departments, programs, and activities that serve first-year and other students. The Office provides leadership and coordination between its own programs, and with campus-wide discussions of issues affecting students. Broad areas of responsibility of the Office include: access and success, innovation in teaching and learning, experiential learning, academic support, and educational policy.

- Learning communities, in the form of Freshman Interest Groups (FIGs) and Transfer Interest Groups (TRIGs) have been operating for many years, and serve approximately 70% of the students entering the University. The learning communities involve co-registration of small groups of students in two courses united by a theme, and a 1-credit seminar taught by trained student peer instructors. The FIGs have been a model for learning communities across the country.

- An emphasis on engagement with learning is evident in a number of initiatives and campus discussions. Evidence of engagement includes:

- the heavy use of the Instructional Center by students of color and some other students, and the staffing of the Center by 18 full-time professional instructors;
- the evening programs conducted by the Center for Learning and Undergraduate Enrichment (CLUE) that involve large numbers of students in out-of-class learning, including Supplemental Instruction-type support and small-group discussion of class topics;
- faculty involvement in professional development activities, such as the Faculty Fellow program and Institute for Teaching Excellence;
- curriculum innovation in the College of Arts & Sciences, through which departments initiate redesign with one-time financial support from the College;
- an elaborate set of undergraduate research offerings in nearly every field of study; and
- the teaching of First-Year "Discovery" classes, which help students to operate effectively in a research university environment.

- A system exists to analyze, predict, and respond to bottlenecks in course availability.

- The University employs a Comprehensive Admissions Selection Process, including holistic review of all applications for admission. (Prior to this year, holistic review was conducted for only a portion of applicants. Holistic review for all selections was initiated only this year, so results are not yet available.)

- A Diversity Research Institute, which provides opportunities and legitimacy for faculty research on diversity issues while producing research to benefit campus diversity efforts.

UNIVERSITY OF MARYLAND AT COLLEGE PARK

Subsequent to the visit to the University of Washington, the Working Group arranged a visit to the University of Maryland at College Park. The University of Maryland provided a model for retention improvement, and at the same time, offered a contrast to the previous visit. At the University of Washington, the various retention programs and strategies appear to have been created and developed somewhat independently. The number and effectiveness of retention-relevant programs are impressive;

however, coordination of such programs continues to be a challenge. While there has certainly been intention and planning involved in the creation of these systems, most of the retention effort has evolved gradually. By contrast, the Working Group found the University of Maryland of interest not only because it had made impressive strides in retention, but also because it appears to have done so at least partly as a result of a sudden change in policy focus. Many of its initiatives have been undertaken within a recent and intensive period of planning and implementation.

Among the important insights and observations gained from the University of Maryland visit were these:

- Retention/Graduation Rate Improvement: The University experienced a dramatic increase in retention. Between 1995-2004 (the dates for which the Working Group had data), the freshman retention rate increased by 5.6 percentage points to 92.8%; the 4-year graduation rate by 19.8 percentage points to 57.4%; the 6-year graduation rate by 11.5 percentage points to 76.2%. At the same time retention rates increased, the academic preparation levels (measured by SAT score) increased as well. It was not possible to separate out the portion of the retention increase that resulted from changes in student academic background as compared that resulting from other changes in institutional environment.

- Institutional Commitment: Retention improvement became an institution-wide priority at a particular point in time. In 1997, the University President called together at "Retention Summit" for campus leaders. The institution's retention rate was seen as its "Achilles heel," the factor that compared least favorably with its institutional peers. All areas of the institution, including every unit, were expected to contribute to retention improvement, and a specific retention rate goal was established.

- Institutional Philosophy: The University undertook a "perspective shift" and articulated a new philosophy: Students who are admitted are capable; the University is a degree-granting institution; students are expected to explore, choose a major, and graduate on time; resources are available to assist students in that process. More recently, a new element to the philosophy has been added by a new president. Called the "Presidential Promise," it suggests that every student will have an experience

that is "complementary to the curriculum," such as a research project with faculty, a living learning community experience, an internship, or a service-learning experience.

- <u>Data</u>: Data informs planning and implementation. Institutional Research provided much of the data upon which policy changes were based and the Registrar's Office now provides "an astounding amount of data to inform advisors and departments what is happening to students. A cross-departmental faculty-staff group produces an array of reports describing student experience.

- <u>Policy Change</u>: Policy changes have been instituted to reduce the rate at which students withdraw from the university, including a class-standing rule, leave of absence rules, readmission policies, and terms of probation and dismissal.

- <u>Program Strategies</u>: Programs of note include:

  o <u>Scholarships</u>: The Bannaker-Key Scholarships attract top students. About half the scholarships are awarded to students of color.
  o <u>Prestigious Scholarships</u>: A full-time person is assigned to work cultivate potential candidates for prestigious scholarships.
  o <u>Freshman Seminar</u>: A one-credit, optional, extended orientation course is offered to new students. It appears to be effective and enjoys support from campus.
  o <u>Access</u>: Two large scale "bridge" programs (about 100 students each) prepare students for entry to the University.
  o <u>Learning Communities</u>: The Honors Program, College Park Scholars Program, and college/major-based programs engage a high proportion of students. The College Park Scholars (CPS) program targets the SAT stratum just below Honors. A two-year program with thematic course clusters and a capstone course, CPS is a key part of the recruitment/retention plan.
  o <u>Early Warning/Probation</u>: The University requests mid-term grades from faculty, and about 70% comply. Probation students are required to meet three times a term with advisors. Learning Assistance teaches a study skills course for students on probation during Winter Term.
    - <u>Advising</u>: All declared students (beginning this fall) are required to develop a four-year

course/graduation plan with their advisor. Undeclared students develop a two-year plan with their Letters and Sciences advisor. Benchmarks (a set of critical courses passed by a particular time) are set, and the benchmarks are monitored by the Registrar. If benchmarks are not met, advisors are notified and a registration block is placed for the student, requiring a meeting with their advisor. The "advising community" of professional advisors meets frequently (every two weeks at least). An advising conference during August provides information, inspiration, and professional development. Many colleges and departments have professional advisors. The estimated student/advisor ratio is enviable. The Registrar has developed an array of technological advising tools to assist advisors.

- o <u>Planning for Course Demand</u>: An elaborate system is in place that uses data from the advising apparatus to predict course demand and organize department commitments accordingly.

The belief in the institutional philosophy ("students are capable, therefore we provide a rich experience worthy of capable students and expect much of the students, including timely graduation") was impressive. Also impressive was the advising plan, which was designed to require student interaction with advisors and monitor students' progress toward degree. Learning Communities, Scholarship Programs, and Bridge Programs were an important part of the recruitment and retention plan. Advisors were able to be proactive because of the mid-term grade information provided by most professors.

Some program elements were less impressive. There was no coordinated approach to academic support. It was noted that transfer students had been a "forgotten population."

Overall, however, it appeared that strong institutional leadership and institutional commitment to retention had produced real change. Data was integral to driving policy change and assessment. There appeared to be broad buy-in from campus personnel across departments, and a strong array of programs was in place to support students.

LESSONS FROM PEERS AND OTHER INSTITUTIONS

The examination of peer institutions yielded a number of important principles:

- Institutions may vary in terms of student "quality" and amount of institutional resources, (SAT, expenditures per student FTE, etc.), yet

- Institutional philosophy, including its content, the way it is communicated to students, and how it is adhered to by faculty and staff, is apparent and important.

- Institutional commitment to retention must permeate the various layers of the institution.

- Data is essential to the process. It drives policy, informs planning, gives decision-makers confidence to act, enhances awareness of student issues, and guides assessment.

- Coordination of activities, though a challenge at every institution, maximizes the effects of retention activities.

- While there are many exemplary programs, it is the collective effect of programs that affect many students at important levels that produces increases in retention.

- Leadership and structure are important to the outcome and continuity of the retention effort.

An earlier section of this report discussed factors that, according to retention literature, are often associated with student attrition. To assess whether, and to what extent, those or other factors seemed to be operating on the Colorado State University campus, a review of existing data – and in some cases generation of new data – was undertaken.

A more detailed look at the data is presented in Appendix 1. A brief summary of reflections generated by the data follows.

THE GENERAL RETENTION PICTURE

Freshman Retention. CSU retains students admitted as new freshmen to the second fall at a rate of about 82%. This rate ranks in the lower half among our peers, and 3.1 percentage points below our CCHE performance goal. (It should be noted that CCHE may calculate retention rates independently, and may produce a figure slightly different than those tracked internally by the University.) Freshman retention rates have been surprisingly stable over many years, varying only slightly from the 82% level. This stability makes attainment of the CCHE performance goal challenging.

Graduation Rate. The general trend in retention rates, measured at the 4- 5- and 6-year levels, has been slightly upward. The greatest change came with the cohorts entering in the early 90's. The new freshman cohort entering in 1992 was the first to achieve a 6-year graduation rate above 60%. Over a period of time, the Admissions Office was successful in increasing the proportion of students admitted at higher Index levels and decreasing the proportion at the lowest Index level, contributing to the upward trend. The six-year graduation trend appears to have plateaued, however, hovering at the 62-63% level. The CCHE performance goal of 63.6% is 1.1 percentage points above the rate for the last cohort tracked (1999). Because the 2002 cohort, the one that will be measured in 2008 for the CCHE performance goal, is already in its third year at CSU, opportunities

> Note on terminology:
> It is useful to measure student persistence and attrition at several points in time. The most frequent measures used in this report are:
> - Freshman retention, defined as the number or percent of first-year students from an entering fall cohort who return and enroll for the following fall semester.
> - Five-year retention, defined as the number or percent of students from an entering fall cohort who are still enrolled or have graduated by the end of five years (including the fifth possible summer term).
> - Graduation, defined as the number or percent of students who have graduated at the end of a designated period. Graduation is most commonly measured at the fourth, fifth, or sixth year (including the trailing summer term). Six-year graduation rate has become the most common measure for comparisons across institutions.

to affect the rate for this class are severely limited. When measured in spring 2004, the 2002 cohort was tracking fairly closely to the retention pattern of the 1999 cohort.

<u>Background Factors</u>:

- <u>Gender</u>. Females have been retained (five-year retention) at slightly higher rates than males, on average. Their graduation pattern is different, however. Females are far more likely to graduate in four years. The difference attenuates at the five-year and six-year points.

- <u>Ethnicity</u>. The gap in 5-year retention between students of color and white students has been quite large in the past – sometimes as much as 20 percentage points – but in more recent years has been narrowing to single digits. (The cohort of 1999, which showed a 17 percentage point gap, was a glaring exception to the trend.) For the cohort that began in Fall 2000, the gap was 7 percentage points. The gap appears to be relatively small in the first year (about 3 percentage points for the aggregated cohorts of 1994 through1998) but grows steadily to 10 percentage points by the end of the sixth fall. This suggests that efforts related to students of color should focus not only on the first year or two, but on all six years.

    The regression study shows that for first-year retention, the factor of race/ethnicity produces less difference as other factors are added to the regression equation. However, at the six-year graduation level, Asian Americans, African Americans, and Hispanics all show significant differences in graduation odds, even when all variables are present in the equation. (Native Americans also show differences at this point, but there is no statistical significance; perhaps because of the small numbers of students in the population.)

- <u>Parent Educational Attainment, or "First Generation College" Status</u>. First generation students average a first year retention rate that is about 5 percentage points lower than that of students whose parents have a bachelor's degree. At the six-year graduation point, the discrepancy elevates to about 12 to13 percentage points.

Regression analysis confirms that first generation background is a significant factor in likelihood of retention and graduation. First generation status shows statistically significant and sizable effects regardless of the other variables entered in the equation.

- Residency. Out-of-state students are retained at lower rates than in-state students. The gap has narrowed to single digits in recent years, though it increased to 10 percentage points for the cohort of 2000. The pattern of lower retention for nonresidents is present for all colleges.

  Regression analysis confirms that residency is a significant factor. It is particularly prominent at the point of first-year retention when many nonresidents depart. It is less prominent at four-year graduation, probably because those nonresidents who are retained to that point are likely to graduate early. By five- and six-year graduation, strong differences return.

- Transfer Status. The number and percent of students who enter as transfers has declined greatly, from 42% in the Fall of 1997 to 27% in the Fall of 2005. A previous study of transfer students (CSU, 2000) showed that transfer students tended to be retained at somewhat lower rates and earn somewhat lower grade point averages than native students. (See "Transfer Students at CSU: A Preliminary Look," at http://www.colostate.edu/Depts/OBIA/pdf/retention/transfer.pdf.)

- Financial Need. Although some analyses were attempted with financial need and financial aid as variables, difficulties with the data limited the studies. Analysis is continuing, and results will be available in the future.

FACTORS ASSOCIATED WITH STUDENT EXPERIENCE AT THE UNIVERSITY

Timing of the Departure Decision. Similar to national patterns, the greatest percentage loss of students occurs in the first year. The first two years together account for 83% of all CSU students who left from the class entering in 1999: 50% in the first year and 33% in the second year. It appears that student decisions to stay or leave are formed early, and are carried out primarily in students' first two years. Interventions and

program support should clearly be frontloaded in those first two years. An exception has already been noted: strong support for students of color should continue through graduation, since their departure rates are greater in later years.

College of Students' Originally-Declared Major. The highest retention is in the colleges of Business (74%) and Engineering (70%). Academic controls for entry to majors in those colleges may account for much of the difference in retention as compared to students in other colleges. On the other hand, retention for the College of Agriculture is 69%, with little selectivity or major controls. Retention for the other colleges varies from 61% to 63%.

Retention by Major. Retention varies by originally-declared major. It is also true, though, that only a little more than half of all students who enter in a declared major other than Open Option, College Open Option, or Open Option-Seeking, graduate in their originally-declared major. Exploration and change of major is developmentally appropriate (Gordon and Habley, 2000). This argues strongly for developmental advising for all students that supports major and career exploration and choice. Developmental advising and planned exploration may help to reduce the number of major changes by individual students. This is important, since the greater the number of major changes, the longer the time to graduation.

Retention by Grade Point Average. As expected, the lower the CSU grade point average (measured as "last cumulative GPA of record"), the lower the chances of retention. What is striking is the effect shown in the regression analysis by first term grade point average. This knowledge suggests two things: first, that intervention must occur early in the first semester if it is to influence students' first term GPA; second, that interventions after the report of first term GPA must be powerful and immediate.

It must also be noted, however, that two-thirds of those who left the University did so in good academic standing, and one-quarter departed with GPA's at or above 3.0. This points to the importance of early warning strategies (assessment and intervention) that sense and address student needs and concerns that are nonacademic, or at least not reflected in grades.

Retention and Academic Standing. About 22% of new freshmen find themselves on academic probation some time within five years of entry.

Within the first two semesters (end of term), 680 members of the new freshman class entering FA03 found themselves on probation. At any one time, between 1,250 and 1,550 students are on probation (PRB1 or PRB2). There is little systematic campus intervention or support for students on probation, however. Students are notified by mail through CASA of their status. There are examples of Advocacy offices and isolated academic departments that may contact students who are on probation, but there is no assurance that the vast majority of probationary students will receive anything more than a letter announcing their status. Clearly, more systematic intervention with students on academic probation is in order. In addition, it will be useful to review probation policies to assure they are serving students and the institution well.

A probation analysis tool has been created at CASA, and this statistical tool will allow more detailed analysis of probation trends and behaviors in the future.

Courses Accounting for D's and F's. 15 courses taught in spring semester 2004, and 13 courses taught in fall semester 2004 had 15% or more of registered freshmen with grades of D or F. A small number of courses had 30% or more of freshmen in the course earn D's or F's. Further exploration should be undertaken to determine whether such patterns are the result of inappropriate placement of students in courses, deficiencies with instruction or curriculum, or some combination of these.

Courses Taken by Students with Low GPA's. An exploration was undertaken to determine whether there were courses or combinations of courses that were associated with students who ended up on academic probations. An analysis of registrations of new freshman students who had end of term GPA's below 2.0 in either FA04 or SP05 shows a number of courses in which a high number and percent of those students earned a failing grade.

RETENTION AND ACADEMIC PREPAREDNESS

Retention and Admissions Index. There is a positive relationship between Index score and graduation rate. Above 95, however, there is no single obvious "break point" at which success is either much higher or much lower.

Regression analysis shows that the effect of the Index score is less than one might expect with some or all other variables in the regression equation. Certainly, Index is related to several of those other variables.

INDICATORS OF THE QUALITY OF THE EDUCATIONAL EXPERIENCE

Retention literature is clear on the importance of student engagement in learning in student retention and success. One measure of student engagement is the National Survey of Student Engagement. Results from the survey in 2003 and 2005 suggest that CSU is not engaging students at the level of many other doctoral extensive institutions or peers. This finding should stimulate an examination of the quality of both in-class and co-curricular methods and opportunities we produce at the university, and strategies for enriching those opportunities.

INDICATORS OF STUDENT PERCEPTION AND SATISFACTION

Data-gathering efforts have increased in recent years (including new activities by the Student Affairs Research Director) with the result that more (but not enough) is known about student attitudes and behaviors. Some of the data is contradictory on its face: students appear to be well satisfied with their general university experience on the one hand, but relatively unengaged on the other. Investigation is continuing, and more useful data is becoming available.

OTHER CHARACTERISTICS OF STUDENTS WHO LEAVE

Destinations of Students Who Leave. A study of students who left from the new freshman cohort entering Fall 02 indicates that most leavers did enroll in another school. Among nonresidents who transferred to other schools, three-quarters returned to their home state.

Profile of Leavers. Accumulated data from such efforts as the CIRP Survey of Students in their initial semester, the Taking Stock Inventory at the sixth week of the semester, and the CIRP Your First College Year Survey at the end of the first year, together provide the opportunity to discern relationships between student perceptions and attitudes and retention/attrition behaviors. A preliminary regression analysis of certain variables available from the Taking Stock Inventory suggests that such a study would be profitable, and could produce a profile of "stayers" and "leavers" that would assist in early warning and intervention efforts.

Comparison of results from the two CIRP studies suggest that student confidence may erode over the first year, producing a greater likelihood of attrition.

Departure and Late Admission. Retention was low for students who entered in fall 2004 and were admitted after June 1 of that year. No systematic factors were identified that explained why the retention rate was low for this group. This may be simply a single-year phenomenon, but observations of late admits will continue in the future to ascertain whether the low retention rate was an anomaly or a pattern. If a pattern, interventions or changes in policy may be appropriate.

Leavers with High Credit Levels. A number of students leave in good academic standing and high credit levels. Interventions might be initiated to increase the number of those students who are able to graduate. Such intervention strategies have been effective at some other institutions (Carey, 2005).

SUMMARY

The data show that both freshman retention rates and graduation rates appear to have "plateaued" in recent years. This suggests major challenges if the University is to make significant changes in the rates, meet its CCHE retention and graduation goals, and achieve the institutional strategic planning goals for enriching the learning environment and increasing student success.

To be serious about such goals, a comprehensive retention planning and implementation effort is necessary. The plan should spark improvement in basic systems that serve all students, and at the same time attend to particular populations whose needs may be somewhat distinct. Transfer students, first generation students, students of color, nonresident students, students experiencing academic difficulty, and perhaps students with greater financial needs must be accounted for in the planning. But many who leave the University are less easily identified. Effective early warning and intervention programs that serve all students must be a part of the comprehensive plan.

Most students who will leave the University do so in the first two years, suggesting that retention strategies ought to focus substantial (but not exclusive) energy in those first years. The pattern of major-changing reflects considerable (and normal) uncertainty about major and career.

Such patterns require that we take seriously the advising systems designed for students in their first two years to assure the advising is effective, developmental, and that it includes features that allow monitoring of progress to degree.

Student engagement in learning underlies all retention strategy. Effective teaching, effective learning, academic support systems, and co-curricular learning experiences together form the "engagement structure" for the campus. Academic and Student Affairs must be strong partners in retention planning and implementation.

Data collection and analysis do not provide "answers" to retention phenomena. They do however, point to opportunities for programs and interventions in some cases, and prompt further investigation in other cases. Many of the opportunities for programs and interventions are addressed in the recommendations for retention strategy in the section that follows.

AN ACTION PLAN OF STRATEGIES AND IMPLEMENTATION STEPS

Colorado State University appears to retain and graduate students at a level just below the average for its peers. It does respectably, as reflected both by the *U.S. News & World Reports* estimate of predicted v. actual graduation rate (2005) and the OBIA estimate (OBIA, 2005a).

It is clear, though, that the University also has considerable room for growth. CSU ranks in the lower half among peer institutions with respect to freshman retention and graduation. As an institution whose mission is to "set the standard" for teaching and other aspects of the educational mission (CSU Draft Strategic Plan, 2005), and one that is becoming increasingly dependent on student tuition, modest retention rates are not sufficient. As a land grant institution whose legacy is to make education accessible to deserving persons from all classes and groups, the differential in retention between students of color and white students, and first generation students and non-first generation students, is troubling.

Because of its commitment to excellence, a comprehensive retention plan is needed to serve the University's and students' interests. Research on retention practice identifies a number of practices that have produced retention results, but given limited resources, it is important to determine a limited number of initiatives that, in combination, promise substantial results. As noted previously, it is not a single strategy, but rather a "web of interlocking initiatives" (Kuh, 2001-2002) that promises real impact. The remainder of this section poses recommendations for these initiatives.

The recommendations fall into four categories:

- Values and Structure for Retention
- Basic Systems
- Student Transition in the First Years
- Proactive Support for Particular Populations

More broadly, the recommendations represent three institutional commitments:

- To create opportunities for exceptional educational experiences across the breadth of the University
- To create a community-wide culture of high expectation

- To require data-driven planning and administration

The implementation of retention strategy recommendations would require resources, but the resources are of different kinds. Some recommendations can be accomplished with existing resources, and some would require new positions and/or new funds. Some of the recommendations require no funds, but necessitate the expenditure of precious leadership capital by campus leaders.

Each of the strategies proposed have a basis both in retention research and CSU realities. The University cannot reasonably implement all retention strategies, even if they are good and proven. Those chosen as recommendations promise the greatest impact given the dynamics and opportunities on our campus.

CREATE A CULTURE OF HIGH EXPECTATIONS REGARDING THE SUCCESS OF STUDENTS AND THE UNIVERSITY'S COMMITMENT TO EXELLENCE IN UNDERGRADUATE EDUCATION

Consistent with the goal of "setting the standard for public higher education" (University Strategic Plan, 2006), the University must create an environment of rich educational opportunities and expect students to take advantage of them.

<u>The University community must articulate and embrace the value that students are capable, and that all students admitted to the University have the potential to graduate</u>.   This value serves to motivate students and guide the actions and policies of staff and faculty.

The opposite of this value is contained in the classic expression: "Look to the left, look to the right; only one of you will succeed." Successful education does not simply wash out the unworthy; it cultivates the talents of those who have been judged worthy through the admissions process. Presumption of worth produces far more than the presumption of deficit.

> **Background:**
> - Retention literature and research emphasize the importance of a clear institutional message and value on a philosophy of high expectations, a "talent development" approach, and an environment of enriching educational experiences (Tinto, 2005; Kuh, 2001-2002; Carey, 2005; Kuh, et al., 2005). An organizational infrastructure is essential to the accomplishment of comprehensive set of retention strategies (Berger, 2000, 2001; Lotkowski, 2004). Academic and Student Affairs have a shared responsibility for retention activities (Kuh, 2005). Data and data systems play a critical role in the design and assessment of retention efforts (Friedman and Hoffman, 2001; Kuh, 2005).
> - Current status: No university-wide structure currently exists to prompt, guide, and assess retention efforts. The University philosophy concerning student potential for success and the expectation to graduate is not clearly articulated. Meanwhile, of those students who began as new freshmen and subsequently graduated, only slightly more than half do so in four years.

George Kuh (2001-2002) has observed that, "all things considered, schools that enact a talent development philosophy are more likely to encourage persistence and student success" (p. 27). Students do respond to the expectations articulated by institutional pronouncements and reflected by institutional action. And, as Vincent Tinto (2005) has noted, "no one rises to low expectations."

Clarity is important here. There is a difference between leading students to believe that they will be retained regardless of performance and

leading students and faculty to believe that the University expects its students to be successful. The first implies that students may continue and graduate in some sort of automatic fashion. This idea has no place in retention efforts. The second, on the other hand, is <u>essential</u> to retention success. Indeed, the institution should only admit students who have been identified through a careful (but not rigid) selection process as those exhibiting promise (not guarantee) for achieving a CSU degree. It should promise those students the high levels of challenge and support characteristic of a student-centered campus, and then should deliver on that promise.

This value communicates that:

- The University community believes in the capacity and promise of its students;
- Strong effort, diligence, skill, and thoughtfulness are expected of its students;
- The campus stands ready to provide the necessary support in the form of intellectually challenging and carefully designed learning experiences, support for academic development, and opportunity for personal and social growth and development

This value raises the bar for the entire campus. Admissions processes, teaching/learning processes, and co-curricular programs must respond to the implied expectations. The value speaks to the best aspirations for students, faculty, and staff.

How should this value be articulated? To begin with, such values should be reflected by the statements of its leaders, particularly the president, vice presidents, deans, and department heads. Over time, the value should be reflected in the actions and statements of all University personnel.

CREATE A STRUCTURE TO PROMOTE AND SUSTAIN RETENTION IMPROVEMENT

Retention planning and implementation are non-routine activities which usually require substantial institutional change. To be successful, the retention effort requires <u>a clear mandate, ready access to data, mechanisms for generating campus consensus, and leadership charged with orchestrating the overall process</u>.

The first requirement is a mandate from the President. Legitimacy for the retention effort derives from the highest level of institutional leadership, and without such legitimacy retention efforts will be doomed to adjustments at the margin. The mandate must be clear, and must specify accountability for results.

Retention is a data-intensive activity. Data analysis is essential to developing campus understanding of the need for change and generating support for particular initiatives. Once the effort is underway, data is required to measure effects. Data must be readily available and in a form that can be accessed without impediment or delay.

Recognizing that academic and psychosocial factors together influence student persistence decisions, primary responsibility for implementing the retention plan should be shared by the Divisions of Academic and Student Affairs. The Vice Provost for Undergraduate Affairs and the Vice President for Student Affairs should co-chair a campus-wide committee whose role would be the coordination of retention efforts. Committee members should have expertise and/or unit responsibility for student retention and success.

ESTABLISH CAMPUS RETENTION GOALS

The Retention Committee should quickly review the evidence on campus retention trends and resources, and recommend retention goals to the President through appropriate channels. The goals should include:

- A freshman retention goal (rate of return of new students to the second fall)*
- A six-year graduation goal (rate of graduation by the end of the sixth academic year for students who entered as new freshmen),* with four- and five-year graduation benchmarks
- A transfer graduation goal
- Goals for critical subpopulations, including:
    - Students of Color
    - First Generation Students
    - Students admitted in the Admissions "Window"

Following adoption of the goals, division leadership should assure that the goals are reflected in Division, College, Department performance plans.

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*Note: The goals need not be the same as those contained in the CCHE Performance Contract. The internal retention goals may well be set higher [though certainly not lower] than the goals in the contract.)

LINK DATA AND ASSESSMENT CLOSELY TO RETENTION PLANNING AND IMPLEMENTATION

Timely, accurate, and complete data should be second only to institutional values and goals in driving retention activity. Data should be employed to assess current efforts and assure that progress is made toward desired outcomes. Equally as important, however, relevant data should be put in the service of all institutional leaders who are charged with planning and executing retention strategies so that these leaders can work continuously to improve the effectiveness of retention-relevant activities (Friedman and Hoffman, 2001).

Recommendations:

- Make retention-relevant data available. Convene representatives from those offices that are most involved in collecting data. These representatives will include at least the offices of Institutional Research, Records, Retention, Financial Aid, and CASA. Charge this group with creating a database of essential elements, and combining these data into a user-friendly format (such as Microsoft Access). Protect identities of individual students (remove identifiers such as University ID and substitute random record numbers), and make this database available to authorized users. Such users would reasonably include department heads in Academic and Student Affairs. Establish requirements related to confidentiality and integrity for the use of the data, and require training for those who would be users. Create easy-to-use queries for the most analyses expected to be most common. Assure a system for updating the database regularly and efficiently.

- Establish a working group of data-conversant individuals who can respond to the data needs of the Retention Coordinating Committee, so that the Retention Committee can operate with relevant and timely data analysis.

The Campus-Wide Retention Committee should measure progress on established retention goals and strategies on a regular basis, and communicate this information in an understandable fashion to the campus as a whole and to particular campus constituencies.

PROMPT PEDAGOGICAL INNOVATION AND REDESIGN OF FIRST-YEAR AND GATEWAY COURSES

The classroom learning experience lies at the heart of any retention effort. The quality of course design and quality of instruction are among the most important variables affecting student learning, satisfaction, connection to the academic environment, and ultimately, retention. Of particular strategic importance are core and foundational courses taken by large numbers of first- and second-year students, and "gateway courses" (courses regulating entrance to or continuation in the major) taken by any students.

Despite tremendous contrary pressures of enrollment, limited resources, and lack of incentive structure, there are yet instances on campus of striking innovation in the design of curriculum and in the teaching methods of first-year and gateway courses. Innovation and redesign, however, should not be isolated or exceptional; they should be a trademark of the learning experience at Colorado State University.

Experiences at a number of campuses (Twigg, 2002; Center for Academic Transformation; Project for the Future of Higher Education; Guskin and Marcy, 2003) demonstrate that innovation in curriculum and pedagogy can increase student learning, stimulate faculty energies, serve the disciplines, and do so without increasing costs. Indeed, many experiences, including those at the University of Washington, demonstrate that innovation can produce cost savings even while increasing learning quality.

Background:
- Retention literature and research are clear that student engagement in learning is the crux of the retention issue (Tinto, 1993 and 1998; Carey, 2005, Kuh, 2005). Engagement of the faculty is critical to retention improvement (Tinto, 1993). There are examples of innovation in pedagogy that has produced more active and effective learning at equal or lesser cost than traditional methods (Twigg, 2002). Structures that involve faculty in teaching and learning, and removal of disincentives are important to the advancement of teaching/learning quality (Cuseo, 1988).
- Current status: Results from the National Study of Student Engagement (2003, 2005) indicate that the University needs to improve its ability to engage students in learning. The challenges related to large class size, particularly for many core, foundational, and gateway courses, underscores the need for pedagogies that engage students. At the sixth week of the first semester, only 41% of first year students report through the Taking Stock Inventory (2005, n=2,383) that they engaged in their classes. At the end of their first year, 48% of freshman students report that they are frequently bored in class (Your First College Year Survey, CSU, Spring 2005). A number of classes in which large numbers of first-year students enroll produce a high number or proportion of D and F grades.

Recommendations:

- Support the development of a new and effective Institute for Learning and Teaching as a critical resource for instructors and departments to produce effective teaching and learning, and innovation in curriculum design.

- With base money, establish a fund specifically directed to increasing the quality of core, foundational, and gateway courses. Involve the Institute in overseeing the fund. The fund would provide one-time financial resources to departments for the purpose of redesigning courses in the major.

  o Issue an RFP to academic departments, soliciting proposals for the use of funds to produce curriculum innovation and redesign. Criteria might include:

    - Quality of concept, including evidence of research on innovative designs at other institutions;
    - Strength of the faculty design team within the department;
    - Involvement of external resources (information, out of department consultation) in the development of the redesign;
    - Cost of operating the new model not to exceed current costs;
    - Promise of the new model to produce active learning, student engagement, and quality learning;
    - Inclusion of a high quality assessment plan that is integral to the course redesign.

  o Appoint a committee of faculty and college/department administrators to evaluate proposals and recommend the highest quality proposals for award.
  o Provide grant funds in the range of approximately $30,000 - $50,000 per award. Acceptable uses of funds could include buyout of faculty time for reallocation to planning the redesign and purchase of equipment, among other uses.
  o Aim for at least 2-3 departmental redesigns per year.

- Select another set of departments for award in each succeeding year, until core, foundational, and gateway courses have been redesigned and enriched in all departments.
- Assess the effectiveness of redesigned courses, and share best practices with the campus.

- Assure that highly effective faculty are assigned to the teaching of core, foundational, and gateway courses.

- Enrich the academic experience for students by Increasing the use of Supplemental Instruction as academic support for students in core, foundational, and gateway courses. Expand opportunities for active and experiential learning, such as undergraduate research, service learning, and internships.

- Make quality teaching a more prominent part of evaluation, promotion, and tenure considerations.

There is strong consensus in retention theory and practice that academic advising is fundamental to retention efforts (Tinto, 1987 and 2005; Cuseo, 2003; Pascarella and Terenzini, 2005). Academic advising serves retention on many levels: it affects student satisfaction with college, influences the effectiveness of students' career planning and decision-making, influences student awareness and use of campus support services, provides opportunity for interaction with staff and faculty out of class, offers connection to potential mentors, and monitors progress toward the degree (Cuseo, 2003). Uncertainty about major and career is a major cause of departure (Tinto, 1993) and delays in graduating, and advising is a primary means of providing guidance to students in this regard (Gordon, Habley & Associates, 2000).

Background:
- Retention literature and research point out the importance of advising in student success (Gordon, Habley, et al., 2000; Cuseo, 2003; Tinto, 1993 and 2005).
- Current status: Advising is not systematically evaluated in all colleges and departments. There is no campus-wide system to assure training for new faculty and advisors, or to update skills and information for continuing advisors. At the sixth week, 29% of new freshmen students reported in the Taking Stock Inventory (2005, n=2,383) that they did not know how to contact their advisor. The advising load in many areas is well above standards noted by the National Association of Academic Advisors. Students who begin as open option graduate take longer to graduate.

Academic advising is a top concern of students in four-year public institutions (Noel-Levitz, 2005). It is also a concern of students at Colorado State University, as evidenced by the frequency with which ASCSU representatives have raised concerns about advising. Recently, at least two University Committees have committed significant attention to advising issues, and each has arrived at similar recommendations. (See, for example, the Report of the Committee on the Undergraduate Experience (CUE), the Task Force Report filed by Vice Provost Laurie Hayes to Provost Loren Crabtree, 1999; and strategies defined by the Academic Affairs Strategic Planning Group after consultation with the Council of Assistant and Associate Deans, 2003.) Those recommendations, however, have been largely ignored by campus policy.

The *Academic Faculty and Administrative Professional Manual* cites advising as an important role of faculty; however, in practice there is wide variability in the quality, evaluation, and recognition of advising across and within departments.

Recommendations:

- Implement the recommendations of past tasks force on academic advising that:

  - Reinforce the advising role of faculty by assuring that advising is assessed and that advising performance is an important part of faculty evaluation.

  - Evaluate advising quality in all academic departments and at CASA.

  - Create vehicles for training new advisors and for updating the skills and information of experienced faculty/staff advisors.

- Ensure that sufficient resources are devoted to advising. (The National Association of Academic Advisors, NACADA, recommends that advising caseloads do not exceed 300 students per full-time advisor, or lower if the students are undecided or in academic difficulty. There are instances on campus of loads approaching 475 students per advisor.) Assess and attend to the dramatic variation in salary levels for professional advisors who have similar responsibilities and capabilities, and develop a career ladder for professional advisors.

- Expand the use of professional advisors for students' first two years in order to provide support to students in exploring and confirming their major choice and negotiating the transitions to the University environment. By so doing, maximize the role of faculty in providing mentoring and promoting independent projects.

- Increase capacity for providing quality advising to undecided students.

- Include career development as a part of the first-year advising process, and connect students to career resources.

- Explore the possible value of admitting students without declared majors. Such a system recognizes that most students enter the University without sufficient knowledge and developmental maturity to commit to a major, and allows for the provision of

appropriate support as students explore and confirm their major directions.

PROVIDE GREATER STRUCTURE TO SUPPORT ACADEMIC PLANNING

At present, students are likely to plan their academic careers one semester at a time, seldom looking ahead to future semesters. This limited planning horizon often prevents students from anticipating requirements and prerequisites, understanding the logic of course sequences, and planning for efficient completion of necessary credits. It is sometimes possible for students to accumulate credits without a clear plan, and without any necessary or required intervention by academic advisors. Indeed, this may be a contributing factors to the prevalence of longer time-to-graduation, often extending to five, six, and even seven years.

Such a system places considerable responsibility upon students who have fairly limited experience and context for academic planning. Alternatively, systems can be designed that provide greater guidance, necessitate longer planning horizons, and allow for intervention is students should depart in important ways from the plan.

Recommendation:

- Require that students develop a four-year plan, with assistance from their academic advisor. In the case of open option students, require development of a two-year plan.

- Have departments define "benchmarks," i.e., course indicators that mark timely progression toward the degree (e.g., at 30-, 45-, and 60-credit levels).

- Develop an automated system that tracks students' progress in relation to their plan. When students fail to take or pass benchmark courses in a timely fashion, the system triggers a notice to the student and their advisor, and requires a meeting with the advisor prior to any further registration.

- Use data from the planning system to better predict course demand, and to allow earlier planning when additional course sections are needed.

- Systematically link resources for academic units to their commitments for providing core, foundational, and gateway courses, with particular emphasis on courses that are part of the benchmarking plan.

- Evaluate the use of differential tuition to eliminate course bottlenecks and reduce the need to control access to particular majors.

INCREASE THE CENTRALITY AND QUALITY OF ACADEMIC SUPPORT

Academic support is critical to retention. On the CSU campus, there are important elements of the academic support function. In general, these have come to be through the initiative of particular units rather than by institutional plan. As a result, they operate without a great deal of coordination, visibility, or overall vision. Services are geographically separate and in some cases isolated. Students must be exceptionally resourceful to take advantage of the range of services available. In fact, the academic support function is, on the whole, marginal or even invisible to most students. Vision, visibility, and coordination are necessary if learning effectiveness is to be a real value of the educational experience.

> Background:
> - Retention literature and research point to the importance of learning outside of the classroom, and available and effective academic support (Carey, 2005; Kuh, 2005; Tinto, 2004; Pascarella and Terenzini, 2005). Academic support takes many forms, and may include group learning such as Supplemental Instruction (Martin and Arendale, 1993).
> - Current status: Academic support services are geographically dispersed and are not well coordinated. Results from the National Study of Student Engagement indicate a significant difference in "enriching educational experiences" between CSU and selected peers.

Recommendations:

- Establish a University learning center at the core, geographically and figuratively, of campus. The learning center should provide:

    o Co-location and coordination of existing services, either through their location in the learning center or their provision of satellite services at the center.

- Systems for student reception, diagnosis of student needs, and cross-referral among services.

- Professional developmental learning services.

- The presence of CASA as an important element of the Center. CASA serves several thousand students annually in a variety of contexts. CASA would induce large numbers of students to come to the learning center facility and would also serve as a primary referral point to appropriate services in the learning center.

- Create within the University learning center a system for supporting, enriching and augmenting courses through out-of-class learning settings that take place throughout the day and evening, for example:

  - Supplemental Instruction (SI), a means of providing academic support for challenging classes with a community of learners in a cost-effective manner (Martin & Arendale, 1993). SI should be provided particularly in support of courses in which the pattern of student success/failure shows it to be an "at-risk course."

  - Enrichment sessions in the model of CLUE (the Center for Learning and Undergraduate Enrichment, a late-night, multidisciplinary study center at the University of Washington). In this case, departments stimulate the creation of out-of-class enrichment sessions associated with particular courses, and led by GTA's or professors. The enrichment sessions serve to extend students' engagement with academic material beyond the classroom, and promote a sense of academic community among learners.

- Locate the new Institute for Learning and Teaching in the same facility as the University learning center, and cultivate partnerships between the two Centers that focus on effective teaching and learning from both the faculty and the student perspective.

- Create a position that combines the coordination of undergraduate research opportunities with providing advising for students on

prestigious scholarships, and locate the position in the University Learning Center.

IMPROVE ACCESS TO COURSES AND MAJORS; PROGRESSION TOWARD DEGREE

Problems with course availability frustrate students and impede their progress toward a degree. Because course availability is so critical to students' progress in their major, it is not surprising that an inability to register for critical courses at the proper time can contribute to students' decision to depart from the University, often to pursue their studies at a different institution. The removal of academic barriers, including particularly lack of access to courses, should be a high priority in the retention plan.

> Background:
> - Retention literature and research point to the importance of early and important relationships with advisors (Gordon, Habley, et al., 2000; Cuseo, 2003) and monitoring of student progress (Carey, 2005).
> - Current status: Students (ASCSU Trend Survey) and advisors (Preview 2005) report difficulty in accessing courses necessary to progress efficiently in the major. 40% of respondents in the 2005 ASCSU Trend Survey (n=1,726) report never or almost never getting advising help.

Recommendations:

- Using data from registration records, information contributed by departmental chairs, secretaries and advisors, and data from the academic planning system proposed earlier, develop a predictive model of courses needed for students to proceed toward graduation in a timely manner, giving particular attention to bottlenecks related to gateway courses. On a short-term basis, this information should be used to plan well in advance of the new semester for the addition of faculty and class sections. On a longer term basis, the information should be used as a basis for allocating the resources necessary for more permanent course capacity.

- Conduct a broad examination of majors at the University, examining for each one the level of student demand for entry, the societal demand for graduates in the field, and the quality or distinctiveness of major in order to determine whether capacity should be maintained, reduced, or expanded. Allocate resources to match the recommended capacity.

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- Where it is determined that capacity cannot be expanded and that it is the students' and University's best interest to restrict demand, assure that the system of controlled access provides accurate and complete information to students, limits to a reasonable period their continuation in a seeking- category, and leverages their regular interaction with appropriate advisors. In other words, it is essential that in the case where the University concludes that it will not meet demand but will admit students seeking the controlled major, systems be designed so that the educational experience will be of a quality that approximates that of students in other major categories.

INVOLVE DEPARTMENTS IN RETENTION EFFORTS

Academic departments are critical organizational elements in retention. The departments house majors, and so become the academic home for students. The departments are also the academic home for faculty, and faculty's interactions with students in and outside of the classroom are pivotal in persistence decisions (Pascarella & Terenzini, 2005; Cuseo, date 1988). For this reason, efforts must be made to position departments so that they will be central, rather than peripheral, actors in the retention effort.

> Background:
> - Retention literature and research emphasize the importance of engagement of academic leadership and faculty in retention efforts (Cuseo, 1988; Tinto, 1993; Kuh, 2005). Data that is readily available at the department level assists department decision-makers (Friedman and Hoffman, 2001).
> - Current status: Detailed department-level data limited. Results from the National Survey of Student Engagement (2003, 2005) point to the need for enriching educational experiences that involve students in active learning and increase interaction with faculty.

Recommendations:

- Make department-level data available to department leadership in a flexible and accessible manner, so that leaders can make informed decisions about strategy and thoughtful evaluations of progress.

- Assure that department performance plans include retention strategies aimed at students in their majors, emphasizing that effective retention strategies are those that increase the quality of the educational experience. Provide examples and best practices to support departments in developing their plans and strategies.

- At the level of the College and the Provost, evaluate department policies relating to advising, mentoring, and promotion and tenure,

assuring that real incentive and support exists in each department for faculty members' interactions with students. (It is recognized that not all faculty in all departments will be equally involved with students; yet each department must have policies and evaluation processes that assure retention-relevant interactions between faculty and students in their units.)

- Expand undergraduate research and service-learning opportunities. Mentoring relationships that grow from undergraduate research are important to retention and to student learning, yet current opportunities are limited both in number and by field. Capitalize on the excellent Hughes Undergraduate Research Scholars model, broadening opportunities to include in all disciplines, developing a Website to advertise a wide range of available projects, and offer academic credit and/or stipend to participants.

ATTEND TO STUDENTS' PSYCHOSOCIAL DEVELOPMENT

Retention theory and research provide consistent support for the centrality of non-academic factors in producing and explaining persistence and attrition. While a variety of testing and grading information provides feedback to students on their academic development, similar measurements are less practical in the area of students' psychosocial development.

Recommendations:

- Identify and address non-academic issues that affect retention. Build on the data generated by the Student Affairs Assessment and Research function to increase understanding of changes in student characteristics, student satisfactions and dissatisfactions. Use the data to augment campus-wide understanding of student needs and concerns.

- Expand mentoring programs and connect them to

Background:
- Retention literature and research confirm that creating the conditions under which learning takes place requires attention to both academic and social integration (Tinto, 1993) or academic and non-academic factors (Lotkowski, 2004; Pascarella and Terenzini, 2005). First year students benefit from mentoring and other experiences that assist them in developing the skills and attitudes make a successful transition to the college environment. (Upcraft, et al., 2004).
- Current status: The Student Affairs Assessment function has begun to develop substantial data on student perceptions and experiences on campus, but more is needed. A new mentoring program for first-year students offers important opportunities, but is not employed to full capacity.

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retention and assessment planning. With assistance from academic advisors at Preview and in the departments, classroom faculty, and others, increase participation in the Ram Connections Mentoring Program. Identify students who could most benefit from group mentoring experiences, and conduct outreach efforts to involve those students in the program.

- Expand student employment to promote student engagement and career development. Encourage development of student employment positions that provide strong mentoring from supervisors and those that connect students to potential careers or career-relevant organizational and leadership skills.

EXPAND LEARNING COMMUNITIES

Nationally and at CSU, learning communities have been adopted as important aspects of comprehensive retention plans (Tinto, 1998; Shapiro & Levine, 1999; Pascarella & Terenzini, 2005). Learning communities are a means of "designing a socially inclusive and supportive academic environment that addresses the social, emotional, and academic needs of students" (Lotkowski, *et al.*, 2004). Vincent Tinto (1998) sees learning communities as the operationalization of the best of retention theory and research because it engages students in learning, and helps students share the learning experience more fully with one another and connects ideas across disciplines.

Background:
- Retention literature and research provide substantial evidence that learning communities increase student engagement and learning (Tinto, 1998; Pascarella and Terenzini, 2005), particularly for students in their transitional first year. Structures that are intentionally designed to facilitate students' transition in the college environment, including first-year seminars and mentoring programs, are important to their success (Muraskin, 1998; Upcraft et al., 2004).
- Current status: The University has a number of learning communities in place, but they serve a relatively small portion of first and second year students. First-year seminars serve a relatively small proportion of students and their effectiveness has not been fully assessed.

The University is involved in planning processes for expanding learning communities (Report on Living Learning Communities, 2005a). While learning communities may legitimately take many forms and vary in their levels of intensivity, emphasis should be given to programs that help to structure the first year (Muraskin, 1998; Thayer, 2000), connect strongly to the curriculum (Kuh, 2001-2002), and intentionally involve students in campus activities, resources, and opportunities (Astin, 1993). In other words, while providing a range of learning community alternatives to students, emphasize those that exert the greatest influence over students' learning environment and connection to the campus, and promise the greatest impact on engagement and retention.

Recommendations:

- Support the campus process already underway to plan and implement learning communities across the campus, so that

learning communities become a distinctive feature of the CSU learning experience.

- Among the learning community models, assure that significant emphasis is given to those strategies that target priority populations, and that have the strongest connection to curriculum and learning.

ENRICH FIRST-YEAR TRANSITION EXPERIENCES

First-year seminars are a prominent feature of colleges' retention efforts. Colorado State University undertook an ambitious approach to first-year seminars in 2001-2003, requiring seminars of all first-year students. Unfortunately, this approach was abandoned before it could be fully developed or assessed. This history makes new first-year seminar initiatives problematic.

Currently, the University has two first-year seminar models. One is a comprehensive 2-3 credit course required for some programs (e.g., -192 seminars in the College of Agriculture, College of Engineering, Honors, Key Academic Community, among others). The second is an optional one-credit "professor's passion" IU 193 course. The approach and content within these -192 and -193 courses is variable.

The freshman seminar strategy remains relatively un-assessed at CSU, and is providing opportunities for relatively few first-year students. At the same time, the literature on retention practice views freshman seminars as one of the most powerful strategies for promoting student persistence.

In addition to first-year seminars, other possibilities of integrating students into the academic and social aspects of the campus are available. Mentoring relationships provide a potentially powerful relationship between a student and a faculty or staff person. Extended orientation to the campus in the days just preceding the beginning of the fall semester, and workshops designed to develop students' study and transition skills in a university environment also offer support for student success in the first semesters.

Recommendations:

- Undertake a thoughtful assessment of the existing first-year seminar strategies, taking account of the differences in approach and content in the various models.

- With attention to the assessment results, consider alternative models in addition to those found most effective.

- Make freshman seminars, particularly those whose aim is to promote "an intimate academic environment in which students engage actively and deeply with academic material" (Carey, 2005), a prominent feature of the expanded campus learning communities.

- Devise incentives to make it reasonable for departments and attractive for faculty to support and teach first year seminars.

- Give particular consideration to learning communities that:

  - Create distinctive and visible opportunities, both academic and co-curricular, for mid-range Index students
  - serve the needs of undecided students and connect them to major and career exploration and choice
  - engage new transfer students with the campus.

- Expand group mentoring programs directed to first-year students.

- Enrich the Ram Welcome program to provide students with greater skills, knowledge and expectations to facilitate their successful transition to the University.

- Increase participation in the study skills and transition skills workshops offered in the fall semester.

CONSIDER RECONFIGURING STRUCTURES FOR OPEN OPTION STUDENTS

Retention literature indicates that students who are undecided about major and career may be more likely to depart college (Tinto, 2005), less directed in their academic planning, and may take longer to

graduate. Typically, more than 30% of freshmen are in Intra-University categories. Of these, about 53% are Open Option, and the remainder are seeking entrance to controlled majors. For either group, there is a degree of uncertainty about major, either because of indecision about major choice or because of uncertain prospects for graduating in a preferred major.

Uncertainty about major is developmentally appropriate (Gordon, 2000; Cuseo, 2003). Students who are in an exploration mode should have the opportunity for a temporary academic home, and for guidance through the exploration and decision process.

Recommendation:

- Rename and/or reconfigure all university open option categories under a new name and concept (for example, the "University Science and Letters Program").

- Charge the Retention Committee with making a recommendation on whether college open option programs, which constitute another 8% of freshman students, should be incorporated into the reconfigured university-level structure.

IV. PROVIDE PROACTIVE SUPPORT FOR PARTICULAR POPULATIONS

Early warning and intervention is one of the cornerstones of any effective retention system (Lotkowski et. al., 2004; Levitz, Noel, & Richter, 1999). Many students experience difficulty of different kinds and intensity during their university career. The University's ability to be aware of significant student difficulties and to intervene in a timely and appropriate way is critical to the prospects for retention improvement.

Often, students' difficulties are not long-term. Students may find themselves on probation, but subsequently return to good academic standing and graduate with admirable records. Students may experience problems in the new social environment, but manage the adjustment and become active, engaged members of the community. Students may experience significant stress related to developments related to their family and friends outside the University, but manage to continue and succeed. The extent to which the University community is prepared to respond in a timely way, communicate care, and provide appropriate support will have much to do with whether students overcome their challenges and continue to graduation, whether they depart for a time but return to complete their degree, or whether they depart the University never to return.

One concrete indicator of success or difficulty is student grades. Analysis shows a strong relationship between first semester grade point average and first year retention and later graduation. In order to influence students' first semester grades, information must be available earlier in that semester in order to

Background:
- Retention literature and research emphasize the importance of proactive intervention in the form of early warning systems (Tinto, 2005; Kuh, 2005; Cuseo, 2005; Pascarella and Terenzini, 2005). Specialized interventions have also been successful with students in academic difficulty (). There are populations that face particular challenges related to socioeconomic circumstances, such as economic disadvantage, first generation status, or underrepresented ethnic group. Financial aid policies, carefully tailored, can have a strong influence on persistence (Thayer, 1997; St. John et al., 2000). Bridge programs can prepare students for retention and success (National TRIO Clearinghouse, 2004; Ramirez and Thayer, 1989). Pre-college programs, especially those that involve long-term partnerships between colleges and school/community can develop a new pool of educational talent that might otherwise be lost to society (Pathways to College Network, 2002; Gulatt and Jan, 2003).
- Current status: The Taking Stock program provides early warning identification and referral. There is no systematic reporting of midterm grades for all first-year students. Intervention with probation students is conducted occasionally but not systematically, though data show that first term grade point average is a powerful predictor of attrition. TRIO programs have demonstrated success in developing University-community/school partnerships and preparing students for college, but the institution has not fully capitalized on the model to generate additional partnerships.

allow identification of students with difficulty and to allow early intervention. Grades are not the only issue however. Two-thirds of the students who leave the University do so in good academic standing, and more than a quarter do so with grade point averages greater than 3.0. Systems must be in place to identify non-academic issues that influence students' decisions to leave.

Systems for identifying student difficulties at an early point are necessary, but not sufficient for increasing retention. The University must develop a capacity for intervention with students, using personnel with the experience, training, and sensitivities to establish immediate rapport with students and the knowledge to connect them to available campus resources.

DEVELOP COMPREHENSIVE EARLY WARNING AND INTERVENTION STRATEGIES

Recommendations:

- Create the capacity and the system for intervening proactively with students experiencing or likely to experience difficulty. Design the system so that it identifies likelihood of difficulty at various points, including the point of admission, the point of entry, the mid-point of the first semester, and the end of first semester.

- Enhance the Early Warning System. Use data from the "Taking Stock at Mid-Semester" program to develop a profile of likely "stayers" and likely "leavers." Increase the skills of faculty, staff, and resident assistants involved with the program so that to augment the effectiveness of intervention. Connect the identification of student difficulties through Taking Stock to the academic advising system.

- Create a system for reporting mid-semester grades and progress for first-year (new freshmen and new transfer) students. Utilize the capabilities of new technology in the development of the system.

- Create a more intentional, proactive advising and corrective program for students who fall below 2.0 in a particular semester and those on academic probation. If the University believes that

all students who are admitted have the capability to graduate, we must invest in those students effectively when they underperform. Explore the possibility of an intensive, self-sustaining program that assists selected students facing dismissal to regain good academic standing through a series of carefully constructed and monitored activities and student initiative.

EVALUATE POLICY AND PRACTICE WITH RESPECT TO ACADEMIC STANDING AND FINANCIAL AID

Recommendations:

- Examine University policies dealing with academic standards and determine if they support positive retention and advance student success before it is too late for students to make the needed changes to advance toward graduation.

- Identify specific relationships between financial aid, educational costs, and retention. National research shows strong relationships between student finances, aid, and retention, but the complexity of the financial aid process and the difficulty of combining data from different systems has impeded analysis of current practices in relation to retention. These factors can be overcome to develop a greater understanding of financial factors in student success.

CAPITALIZE ON "BRIDGE" AND "PIPELINE" STRATEGIES

Summer Bridge Programs across the country and at CSU have been effective in increasing student success, particularly those students who face obstacles related to socio-economic status, lack of academic preparation, or others (National TRIO Clearinghouse, Pascarella & Terenzini, 2005). The CSU Bridge Program conducted by the Center for Educational Access and Outreach (CEAO) has operated well for many years on a shoestring, without a secure budget, and with resources to serve very few students. The Summer Bridge Program is essentially a highly structured living learning community, and should be considered a part of the University Learning Community Strategy. The program should

expand to provide more comprehensive services and to provide them to more students.

The "pipeline" concept relates to mutual, continuous partnerships formed with schools and communities for the purpose of increasing students' motivation and preparation for postsecondary education opportunities. Pipeline programs require a commitment to real partnership, and to a substantial time between program initiation and results. The payoff, however, can be considerable in terms of the quality of prepared, diverse students, and the goodwill from genuine university/community relationship.

Recommendations:

- Expand pre-college programs such as the Bridge Scholars Program, and increase such programs' centrality to campus academic support strategies. Early investment to develop students' skills, motivation, and information will pay dividends in terms of increasing the diversity of student enrollment and the success of students served.

- Expand "pipeline programs that operate in partnership with schools and communities to prepare students for entry and success in higher education. Structured, long-term partnerships with selected school districts will yield motivated, prepared, and diverse candidates for admission to and graduation from the University.

EXPAND THE BRIDGE PROGRAM

Summer Bridge Programs across the country and at CSU have been effective in increasing student success, particularly those students who face obstacles related to socio-economic status, lack of academic preparation, or others (National TRIO Clearinghouse, Pascarella & Terenzini, 2005). The CSU Bridge Program conducted by the Center for Educational Access and Outreach (CEAO) has operated well for many years on a shoestring, without a secure budget, and with resources to serve very few students. The program should expand to provide more comprehensive services and to provide them to more students.

The Summer Bridge Program is essentially a highly structured living learning community, and should be considered a part of the University Learning Community Strategy. The Center for Educational Access and Outreach has long experience with this model, and is the appropriate home for the program, but efforts should be made to increase the program's centrality to the campus.

Recommendations:

- Recognize the Summer Bridge Program as a critical strategy in increasing retention and diversity.

    o Increase program capacity to 80 students and provide sufficient resources to attract and support students at this level.

    o Position the program so that it is fully integrated with campus systems. Tie the program closely to the admissions process, so that candidates for the program are identified early. Also, coordinate closely with the Academic Summer Session, Advocacy programs, CASA, Residence Life, Student Financial Services, the Academic Advancement Center, the proposed Learning Center, and others so that the program and students are intentionally and fully integrated with campus support systems.

EXPAND "PIPELINE" PROGRAMS

Clearly, the most effective time to deal with students' preparation for college is during their elementary and secondary school years (Martinez & Klopott, 2003). University planners should take the long view and intensify investment in pre-college populations, particularly in the development of substantial and long-term partnerships between the University and elementary and secondary schools. While excellent models of such partnerships exist (CSU TRIO programs, for example), and some new ones are forming (Key Service Community, Department of Sociology, and CEAO with Adams County 14 schools), the University has not investing heavily in this important strategy.

<u>Recommendations</u>:

- Continue and augment the support of partnerships that promise to develop young students' academic skills, course preparation, and aspirations. Assure that the partnerships are pursued with the objective of long-term relationship and continuous service to the schools and communities involved.

The following time line is proposed for the implementation of the recommendations within this report.

FY06: SPRING 2006

Appoint a campus-wide retention committee, co-chaired by the Vice President for Student Affairs and the Vice Provost for Undergraduate Affairs, that includes members with expertise and/or unit responsibility for retention and student success. Charge the committee with coordinating the University's retention planning efforts and monitoring progress toward achievement of retention goals.
Priority should be given to the following strategies:

1) **Begin changing the campus culture to one of high expectations**

   a. Clearly state that the University only admits students judged capable of graduating.
   b. Articulate the institution's expectations that the University will enhance the educational opportunities available to students, that students will take advantage of those opportunities, and that faculty, students, and advisors will work together to ensure that students complete their degrees in a timely fashion.
   c. Stress that improving the University's retention to graduation rate is a shared, campus-wide responsibility.
   d. Begin process of updating the language in the Catalog, the Web, and other media to develop a consistent message regarding these expectations.
   e. Begin the process of examining all policies and messages to ensure that campus policies support high levels of expectation regarding students' academic success and their ability to graduate in a timely manner.

   Required Resources: No new resources

2) Begin to improve central and unit-level capacity to collect and analyze important institutional retention-related data and to integrate that enhanced data-analytic capacity into central and unit-level decision making.

   a. Charge the Retention Committee to work with the Senior Vice President and Provost, the Vice President for Administrative Services, the Associate Vice President for Information and Instructional Technology, and others as appropriate to develop a plan for enhancing central and unit-level capacity to collect, analyze, and share access to critical data.
   b. Ensure that the implementation of the new Student Information System fosters decentralized access to data and that decision making tools are developed in conjunction with the implementation so that they foster retention related analysis.
   c. Charge the Retention Committee with the development of an assessment plan for guiding, improving, and evaluating the overall retention plan.

   Required Resources: Personnel to develop tools and training to enhance access to institutional data in a timely manner

3) In conjunction with the Institute for Learning and Teaching (ILT), initiate planning for a program to provide incentives for systematic innovation and redesign of core, foundational, and gateway courses.

   a. Create an RFP (Request for Proposal) process that invites department proposals for systematically improving their core, foundational, and gateway courses. Provide one-time funding to implement three-to-four of the best proposals (it is expected that central funds would be used only to develop revisions). Include as priorities in the RFP that course redesign promote active and experiential learning and attend to best teaching/learning practices in the discipline. Tie the process to the requirement (included in the CCHE/CSU Performance Contract) to assess students' knowledge in the Core Curriculum.
   b. Ensure that first-year, foundational and gateway courses are taught by highly effective teachers and incentives are created to enable this.
   c. Charge ILT with providing professional development in support of teacher improvement.
   d. Charge ILT to work with Faculty Council and the college deans to identify ways to make quality teaching a more prominent part of evaluation, promotion and tenure considerations.

Required Resources: Adequate personnel and resources within ILT to enable effective training and funding for faculty based incentives within the colleges to enhance high quality teaching of core, foundational, and gateway courses. (Provide $100K in funds for FY07, estimated sufficient to support three to four departmental course redesigns. Using the same base funds, expand the process to additional departments in FY08 and FY09.)

4) **Pilot a new learning community program focusing on Open Option students, major exploration, and career discovery.**

   a. Plan the program during spring semester, 2006.
   b. Recruit approximately 35 students for entry into the program for Fall 2006.

   Required Resources: Planning and recruiting will proceed with available resources.

5) **In conjunction with Institute for Learning and Teaching, the Chair of Faculty Council, appropriate Faculty Council Committees, and CAAD, initiate planning for the development of a system of course and credit hour benchmarks that can be used to measure student progress toward graduation in each program of study**.

   Required Resources: Time and effort by committees and departments.

1) **Fund the highest priority proposals for systematic redesign of department core, foundational, and gateway courses. (See action item 3 in the Spring 2006 section above.)**

   Required Resources: $100,000 to fund systematic redesign of courses in three to four departments.

2) **Determine costs for expanding data analytic capacity and access**.

   Required Resources: Costs to be determined during FY07, and proposed for FY08.

3) **Develop a plan to provide sufficient resources for academic advising.**

   a. The plan should include how quality advising would be assessed and included in the evaluation process for faculty.
   b. Explore the costs and benefits of expanding the professional advising system within each college, especially with regard to academic program planning, and attention to academic advising for first two years.
   c. Determine how ongoing advisor training should be conducted and who will assume responsibility for these activities.
   d. Determine the extent to which resources for undecided students should be expanded and build those requests into FY08 budgets.
   e. Incorporate career development into the advising process of undeclared students within CASA and connect first year students to the Career Center. (This has already been proposed as part of the Career Center budget.)
   f. Incorporate enhanced advising and career exploration into the Career Discovery and Major Selection Learning Community, as described in Item 7 (page 79).

   Required Resources: Develop a budget based on items a-e for inclusion in the FY08 budget request.

4) Complete planning for the establishment of a new university learning center to be located in the core of the campus.

    a. Use the remaining FY06 and FY07 budget years to plan the new center and to determine what new resources would be needed and what existing resources can be located into a central operation.

    b. Identify a space for such a center and develop plans for the renovation of space and the location of identified services within the space. (Possibly space in the current Music Building). Plan to access the space once it becomes available.

    c. Determine the staffing needs for the center and develop collaborative programs between the center and other offices such as CASA, the Career Center, the Institute for Teaching and Learning (ILT), and the colleges.

Required Resources: One-time funds of $30,000 for space planning and initial leadership staffing for the development of such a center.

5) Establish systems for academic planning that promote retention.

    a. Develop a student academic planning process that enables students and their advisors to create two and four year semester course plans.

        1. Incorporate this planning process as an essential component of the first semester advising process for all new students.

        2. Students would be expected to follow this academic course plan and changes would have to be made in conjunction with their academic advisor.

        3. Colleges could establish key benchmark courses with their major course plans that would mark timely completion to a degree.

        4. Data from the semester course plans could be used to create predictive course demand profiles for each semester, enabling better course and budget planning.

    b. Develop capacity, through the new Student Information System and other systems, to support tracking of course planning, and signaling completion or lack of completion of course planning benchmarks.

c. Determine the extent to which differential tuition might be used within colleges to eliminate course bottlenecks, and minimize the need for controlled majors due to adequacy of advising and course availability.

Required Resources: Staff time to develop the system.

6) **Assure that departmental plans include and support the University goals and evaluation mechanisms regarding retention efforts and outcomes**

   a. Request that each dean and department head establish unit goals and strategies for retention efforts within their colleges, with emphasis on students' first two years.
   b. Provide deans and department heads access to institutional data and decision making tools that are related to retention.
   c. Expand opportunities for undergraduate research, service learning, and leadership development opportunities to increase student involvement with faculty and with applied learning out side of the classroom.

Required Resources: Provide staffing to adequately coordinate and develop these opportunities within the institution.

7) **Increase capacity to provide learning community experiences for students who reside on and off campus. Provide a range of learning community options, emphasizing those options that promote structure to the first year, have strong curricular components and foster student connection with the University**

   a. Develop a Career Discovery and Major Selection first year program for students in Open Option programs and incorporate the learning community concept in this program.

      1. All undeclared students would be housed in the open option program
      2. Create a new name for this program.
      3. Cluster students with advising and the first year learning community around general academic interests/ focus such as science, humanities, etc.
      4. The First year program would have a career discovery, major commitment theme with opportunities for students to shadow professionals in interest areas and engage in community service.

5. Students would develop two year academic plans along with life planning goals and career discovery.
6. Professional staff would provide year long mentoring.
7. Students would be expected to be accepted in a major no later than the beginning of the fourth semester.
8. Ensure that students who are academically successful can access majors or find opportunities in other majors through career guidance.

b. Explore the development of a "Colorado State Scholars" program for selected students with Indexes between 114 and 128, who are not admitted to the University Honors Program.

1. These scholars would become part of a learning community, possibly within a residential setting; possibly tied to residential college learning communities. For example: Colorado State Natural Science Scholars could reside in the Natural Science Residential College and participate in a freshmen program designed for students seeking careers in the natural sciences.
2. Participate in designed academic first year seminars around academic interests.
3. Professional staff would provide mentoring during the first year.
4. Provide enhanced experiential learning opportunities for these students.
5. Explore the establishment of a modest recognition scholarship for participation in this program.

Required Resources:
$90,000 in base funds allocated in FY07 to establish the Career Exploration and Major Selection Learning Community in Fall 2007.
$30,000 in one-time funds to develop the curriculum and program and to recruit students so that at least one new learning community aimed at middle Index students begins in fall 07. Continue planning for additional programs to be implemented in FY08.

8) Through the use of enhanced, more proactive advising and mentoring, expand the campus-wide intervention capacity to increase student retention and foster student graduation.

     a. Enhance the existing early warning system to intervene more systematically with students who are experiencing academic difficulties.
     b. Create a system for reporting mid semester grades for first year students.
     c. Create an intentional, proactive advising and corrective intervention program for students on probation and/or facing academic dismissal.
     d. Examine university policy that deals with academic standards and determine if they support positive retention and advance student success before it is too late for students to make the required changes to advance toward graduation.

Required Resources: Staffing and operational resources to develop the program.

9) Expand and utilize pre-collegiate and outreach programs to provide greater opportunities for underrepresented students to access higher education and graduate.

     a. Expand the summer Bridge Program.
     b. Expand "pipeline" programs that operate in partnership with schools and communities to prepare students for entry and success in higher education.

Required Resources: Provide funding for 15 students at $4,000 each, or $60,000, for the Bridge Program beginning with the Summer 2007 program. Determine the resources necessary to expand pipeline programs for FY08.

10) Identify and develop plans for addressing nonacademic, psychosocial issues that affect retention.

    a. Collect data on nonacademic factors that directly and indirectly impact retention and develop intervention strategies.
    b. Expand the use of campus employment to promote engagement, career development and student retention.
    c. Determine how financial aid impacts student retention and develop a plan for using aid to enhance retention beyond the first year.

Required Resources: To be estimated and prepared for phase-in beginning FY08 once the programs are clearly defined.

11) Expand experiential learning opportunities by enhancing Service Learning.

    a. Provide support for identifying and propagating best practices among faculty.
    b. Provide mini-grants and fellowships for faculty.
    c. Provide support for a full-time Associate Director for Service Learning in the SLCE Office.
    d. Recognize exceptional achievement and innovation.

Required Resources: $73,000 for staffing, grants and fellowships, best practices, and recognition activities.

CONCLUDING OBSERVATIONS

This paper began with a review of retention literature. At a general level, the literature teaches us several important principles about good retention practice. Sound retention strategy:

- aims to enrich the educational experience;

- operates from a value on the potential of students to succeed and contribute;

- recognizes the importance of both academic and social integration;

- implies high expectations of students <u>and</u> faculty and staff;

- provides a balance of challenge and support;

- emphasizes a community of learners; and

- requires sound campus systems.

These principles are evident not just in the literature on retention theory, they are present in the research on retention practice and in the institutional examples explored by the Retention Working Group.

Colorado State University is doing reasonably well in retaining and graduation students, and is doing so in a financially constrained environment. However, it is clearly in the University's interest – from the points of view of finances, academics, reputation, and public accountability – to improve. And opportunities for improvement are evident. Data on retention trends highlight areas in which attention is warranted: gaps in success rates based on residency, ethnicity, and parent educational attainment; departures by students who are not just in good academic standing but earning high grade point averages; loss of students with high levels of earned credit; indicators that students are not as engaged in learning as we would wish.

Opportunity also presents in the fact that our University has not fully employed the range of best retention practices available. The report

recommends institutional action in these areas, including the development of values and structures to promote and sustain retention improvement; improvement of basic systems for teaching/learning, academic advising, academic support, course and program availability, and faculty-student interaction; expansion of strategies to facilitate successful transition and performance by first-year students; and enhancement of systems for early warning and intervention with particular populations.

No one strategy or program will make the substantial difference in retention that we desire. Rather, it is a set of actions, a "web of interlocking initiatives" (Kuh, 2001-2002), which, in combination with existing institutional strengths, will move the campus culture closer to the student-centered environment we embrace as a value.

Perhaps the most important point to be made with respect to student retention on our University campus is that good retention practice reinforces the primary values of our institution: quality learning, student engagement, strong and inclusive community, among others. Our attention to retention issues helps us to achieve the quality to which we aspire as an institution. The adoption of thoughtfully designed and carefully assessed retention plans helps us to fulfill our mission, vision, and values.

APPENDICES

Appendix 1:

Retention at Colorado State University: Indicators and Factors

Appendix 2:

Observations Concerning Indiana University at Bloomington

APPENDIX 1:

RETENTION AT COLORADO STATE UNIVERSITY:
INDICATORS AND FACTORS

As a part of its considerations, the Retention Working Group, with assistance from the Ad Hoc Retention Research Group, collected existing institutional data and conducted additional analyses to inform the retention discussion.

The Office of Budgets and Institutional Analysis (OBIA) maintains considerable data on student demographics and performance. Of particular help is the Freshman Retention Study (OBIA, 2005, on the Web at http://www.colostate.edu/Depts/OBIA/degree-grad.html), a longitudinal study of the retention and graduation behavior of cohorts of new freshmen that has been maintained and enhanced over a substantial period, from 1980 to the present. The Working Group and Research Group relied heavily upon OBIA and its studies in many of the descriptions presented here. The Director of Institutional Analysis reviewed the information presented in this Appendix and considered it to be useful and well-presented.

The data used to generate trend and statistical analysis for CASA studies was compiled by capturing data at particular points in time from the Delphi Data Warehouse. These weekly extracts are frozen at Census and at the end-of-term to allow for extended data analysis. In all terms, CASA data differs by a small amount (up to 15/23,000) from the data extracts that are pulled exclusively by OBIA for reporting purposes. Definitions are consistent with those of OBIA in defining populations. In any case, this document and the data from CASA studies are intended for internal reference and discussion only.

The data presented are not exhaustive. Indeed, they prompt many interesting and pertinent questions and further, more detailed, investigation in the future.

COMPARATIVE INSTITUTIONAL DATA REVIEWED BY THE WORKING GROUP

In making comparisons between Colorado State University and other institutions several sources were used. Three charts of data are presented on the following pages.

The first chart (page 85) relies primarily on data from the Education Trust (2005). A complete description of the data elements can be found at http://www.collegeresults.org/aboutthedata.aspx.
The final three columns, however, showing predicted and actual graduation rates, use data from the *U.S. News & World Reports* (2005).

The colleges and universities included in the chart were included for the purposes of several different comparisons. The columns "Internal" and "Institutional (INST'L)" denote that institutions are part of CSU's Internal or Institutional peer groups. Under the column "Ed Trust," entries show which institutions were part of a peer group in the Education Trust "College Results Online" (2005). The Ed Trust peer groups include CSU (peers identified as comparable to CSU), UW (peers of the University of Washington, Seattle), and UMD (University of Maryland, shown without any additional peers). [Note: the peers of the University of Washington were not intended to be directly comparable to CSU. The committee included these institutions as background to its site visit at the University of Washington.]

Institutions are ordered by the magnitude of the difference between actual and expected graduation rate ("diff").

Notes on the Education Trust Data
[Technical notes on the data can be found at: http://www.collegeresults.org/mainMenu.aspx]
Graduation Rate Data. Institutional graduation rate data are taken from the U.S. Department of Education's National Center for Education Statistics Post-secondary Education Data System (IPEDS), the Graduation Rate Survey (GRS). The graduation rate shown in the chart pertains to the cohort entering 1997 and measured six years later (2003).
Identification of "Similar Institutions." Eleven factors that are statistically correlated to six-year graduation rates are used in an algorithm that produces a "similarity score." The factors include (in order of weight, highest to lowest): percent of undergraduates receiving Pell Grants, student-related expenditures/FTE student, sector (public vs. private), admissions selectivity, estimated median SAT (or ACT equivalent) of freshman class, percent of undergraduates who are part-time, number of full-time equivalent undergraduates, Carnegie Classification, percent of FTE undergraduate students age 25 and over, status as an HBCU, and status as a commuter campus. Additional filters are also applied.
Student and Related Expenditures/FTE. This measure includes instructional, student services, and academic support expenditures, using a formula developed by the National Center for Higher Education Management Systems (NCHEMS).
Underrepresented Minority ("UR Min)".   This is calculated as the percent of FTE graduates who are Black, Latino, or Native American (IPEDS data).

Data for the next two charts (pages 86 and 87) were taken from the OBIA study, "Six-Year Graduation Model: National Evidence" (2005a). The charts show Colorado State University in relation to its Institutional Peers (first chart) or Internal Peers (second chart), ordered by six-year graduation rate. The OBIA study used IPEDS data as the source for key institutional characteristics.

Notes on OBIA Study Data

Graduation Rate Data. "The six-year graduation rates of the entering freshman cohorts of the 1997 and its covariate variables are from a) IPEDS Data feedback Report: 2004, National Postsecondary Education Cooperative b) Peterson's Undergraduate Surveys."

State and Institutional Support. The variable is defined as "general fund per student FTE."

OBIA (2005a)

	Peer Groupings					Education Trust Data					U.S. News Data 6-yr Grad Rate		
EdTrust	INST'L	INTERNAL	Institution	State	SAT	$/FTE	Size	Pct Pell	UR Min	Grad Rate	Predicted	Actual	Diff
CSU			Illinois State University	IL	1085	$7,481	17,240	20.5%	9.0%	59.1%	46	68	16
CSU			Auburn University Main Campus	AL	1125	$8,847	18,140	16.3%	8.8%	67.6%	52	65	13
UW			Pennsylvania State University-Main Camp	PA	1195	$21,775	33,975	18.7%	7.6%	82.5%	71	84	13
UW	INST'L	INTERNAL	Michigan State University	MI	1125	$11,631	32,361	18.9%	12.1%	69.5%	58	71	13
CSU			Indiana University-Bloomington	IN	1105	$9,613	29,146	15.4%	6.1%	71.8%	59	71	12
	INST'L	INTERNAL	Texas A & M University	TX	1185	$12,147	33,901	14.4%	12.3%	75.2%	66	76	10
	INST'L	INTERNAL	Washington State University	WA	1060	$9,257	16,799	26.1%	7.7%	60.0%	50	60	10
		INTERNAL	Virginia Polytechnic Institute And Stat	VA	1195	$9,192	20,936	14.1%	8.1%	74.2%	65	74	9
CSU			University Of Oregon	OR	1105	$8,468	14,962	24.9%	5.6%	59.8%	56	64	8
UW	INST'L		University Of California-Davis	CA	1175	$17,289	21,799	28.5%	13.2%	81.1%	73	81	8
UW	INST'L		Purdue University	IN	1145	$10,177	30,478	16.0%	6.1%	65.7%	57	64	7
	INST'L		University Of Illinois At Urbana-Champa	IL	1240	$9,456	28,472	15.6%	14.1%	81.0%	73	80	7
CSU			University Of Iowa	IA	1125	$11,888	18,594	17.3%	4.9%	64.5%	60	66	6
CSU	**INST'L**	**INTERNAL**	**COLORADO STATE UNIVERSITY**	**CO**	**1105**	**$7,551**	**20,049**	**15.5%**	**9.3%**	**62.1%**	**58**	**64**	**6**
UW			University Of Wisconsin-Madison	WI	1240	$12,426	27,711	11.7%	5.2%	75.8%	73	79	6
UW			Rutgers University-New Brunswick	NJ	1190		25,654	25.8%	16.5%	72.2%	65	71	6
UW			University Of Iowa	IA	1125	$11,888	18,594	17.3%	4.9%	64.5%	60	66	6
CSU	INST'L	INTERNAL	Iowa State University	IA	1125	$8,395	21,198	22.7%	5.1%	65.7%	63	67	4
CSU			Western Michigan University	MI	1045	$7,126	21,268	17.8%	7.0%	56.1%	52	55	4
CSU			Louisiana State University	LA	1125	$7,811	24,523	20.1%	11.8%	56.0%	54	58	4
UW			University Of Washington-Seattle Campus	WA	1185	$19,575	25,059	21.1%	7.3%	71.3%	65	69	4
UW			University Of Massachusetts-Amherst	MA	1135	$11,043	17,825	21.6%	7.9%	64.0%	58	62	4
	INST'L	INTERNAL	Oregon State University	OR	1070	$8,024	14,504	27.8%	6.0%	60.6%	56	60	4
CSU			University Of Colorado At Boulder	CO	1165	$11,107	24,778	13.0%	8.0%	67.8%	63	66	3
CSU		INTERNAL	University Of Nebraska At Lincoln	NE	1105	$8,040	16,763	19.3%	4.5%	59.5%	58	61	3
UW			University Of Maryland-College Park	MD	1270	$12,401	23,826	18.8%	17.8%	70.7%	70	73	3
UW			University Of Colorado At Boulder	CO	1165	$11,107	24,778	13.0%	8.0%	67.8%	68	66	3
UW	INST'L		Ohio State University-Main Campus	OH	1165	$14,551	34,816	23.0%	10.7%	62.1%	59	62	3
		INTERNAL	Kansas State University	KS	1025	$8,132	17,218	25.4%	5.3%	56.2%	56	59	3
		INTERNAL	University Of Georgia	GA	1205	$8,108	23,786	13.5%	6.7%	71.3%	71	74	3
UMD			University Of Maryland-College Park	MD	1,270	$12,401	23,826	18.8%	17.8%	70.7%	70	73	3
CSU	INST'L	INTERNAL	North Carolina State University At Rale	NC	1195	$10,825	20,260	13.9%	12.9%	63.4%	65	67	2
CSU			Texas Tech University	TX	1120	$7,698	21,885	21.5%	14.4%	53.7%	52	54	2
UW	INST'L	INTERNAL	North Carolina State University At Rale	NC	1195	$10,825	20,260	13.9%	12.9%	63.4%	65	67	2
UW			University Of Arizona	AZ	1115	$10,467	25,639	23.7%	19.1%	54.7%	59	57	2
UW			University Of Tennessee	TN	1085	$17,291	18,083	20.1%	8.8%	58.8%	58	59	1
CSU		INTERNAL	University Of Missouri-Columbia	MO	1165	$9,636	19,502	16.3%	7.8%	66.5%	68	68	0
CSU	INST'L	INTERNAL	Oklahoma State University	OK	1085	$7,235	17,224	27.6%	13.9%	58.3%	58	58	0
CSU			University Of Kansas - Main Campus	KS	1105	$8,917	18,774	14.1%	7.5%	58.1%	59	57	-2
UW			University Of Minnesota-Twin Cities	MN	1145	$17,700	28,273	16.2%	6.9%	54.4%	63	56	-7

DATA FROM OBIA RETENTION STUDY OF INSTITUTIONAL PEER INSTITUTIONS

COMPARISON WITH **INSTITUTIONAL PEERS**	Six Year Grad Rate	Total Enrollment	Tuition and fee revenues per FTE ($)	State appropriation Revenue per student ($)	% receiving federal grant aid	SAT combined score	ACT composite score	% Part Time	General Fund per FTE ($)	Expt'd Grad Rate	diff
University of California - Davis	81.1	29,402	4,896	16,212	22	1,175		10	21,108	71.23	9.87
University of Illinois at Ubana - Champaign	80.7	40,458	5,671	8,726	18		27.5	9	14,397	73.52	7.18
Texas A & M University****	75.2	44,813	5,545	9,875	14	1,185	25.5	12	15,420	69.93	5.27
Michigan State University	69.5	44,542	6,506	8,837	18	1,145	24.5	15	15,343	65.74	3.76
University of Colorado at Boulder	67.8	32,423	8,458	2,545	12	1,180	25.5	19	11,003	63.06	4.74
Purdue University - Main Campus***	67.2	40,376	7,180	7,260	17	1,145	25.5	12	14,440	65.82	1.38
Iowa State University	65.7	27,380	5,011	9,772	23	1,205	24.5	13	14,783	69.92	-4.22
North Carolina State University at Raleigh	62.8	29,854	4,152	13,212	18	1,195		24	17,364	67.40	-4.60
Colorado State University	62.1	28,186	5,447	4,872	15	1,110	24.0	22	10,319	55.62	6.48
Ohio State University - Main Campus**	62.1	50,731	7,083	7,960	19	1,185	25.5	14	15,043	68.89	-6.79
Oregon State University	60.6	18,958			27	1,070	23.0	13			
Washington State University	60.0	22,712	4,722	8,866	19	1,060		18	13,588	55.63	4.37
Oklahoma State University - Main Campus	58.3	23,844	2,700	8,585	23	1,100	23.5	22	11,285	55.05	3.25

** Ohio State University-Columbus

*** Purdue-West Lafayette

**** Texas A & M University-College Station

DATA FROM OBIA RETENTION STUDY OF INTERNAL
PEER INSTITUITONS

COMPARISON WITH **INTERNAL PEERS**	Six Year Grad Rate	Total Enrollment	Tuition and fee revenues per FTE ($)	State appropriation Revenue per student ($)	% receiving federal grant aid	SAT combined score	ACT composite score	% Part Time	General Fund per FTE ($)	Expt'd Grad Rate	diff
Texas A & M University**	75.2	44,813	5,545	9,875	14	1,185	25.5	12	15,420	69.9	5.3
Virginia Polytechnic Institute and State University***	74.1	27,755	5,874	7,903	11	1,195		11	13,777	71.6	2.5
University of Georgia	71.3	33,878	4,052	12,250	12	1,205	25.5	15	16,302	71.9	-0.6
Michigan State University	69.5	44,542	6,506	8,837	18	1,145	24.5	15	15,343	65.7	3.8
University of Colorado at Boulder	67.8	32,423	8,458	2,545	12	1,180	25.5	19	11,003	63.1	4.7
University of Missouri - Columbia	66.5	26,805	5,807	9,288	15		25.5	15	15,095	63.5	3.0
Iowa State University	65.7	27,380	5,011	9,772	23	1,205	24.5	13	14,783	69.9	-4.2
North Carolina State University at Raleigh	62.8	29,854	4,152	13,212	18	1,195		24	17,364	67.4	-4.6
Colorado State University	62.1	28,186	5,447	4,872	15	1,110	24.0	22	10,319	55.6	6.5
Oregon State University	60.6	18,958			27	1,070	23.0	13			
Washington State University	60.0	22,712	4,722	8,866	19	1,060		18	13,588	55.6	4.4
University of Nebraska at Lincoln	59.5	22,559	3,782	9,912	22	1,160	24.0	17	13,694	61.1	-1.6
Oklahoma State University - Main Campus	58.3	23,844	2,700	8,585	23	1,100	23.5	22	11,285	55.0	3.3
Kansas State University	56.2	23,050	3,464	7,942	25		22.0	22	11,406	48.7	7.5

** Texas A & M University-College Station

*** Virginia Tech

FIRST-YEAR RETENTION AT PEER INSTITUTIONS

Data on first year retention rates are taken from the *U.S. News and World Reports* (2005). Colorado State University ranks eleventh out of thirteen institutional peers, and ninth out of fourteen internal peers.

COMPARISON WITH **INSTITUTIONAL** PEERS	Freshman Retention Rate
University of California - Davis	92
University of Illinois at Ubana - Champaign	92
Michigan State University	90
North Carolina State University at Raleigh	90
Texas A & M University****	89
Ohio State University - Main Campus**	87
Purdue University - Main Campus***	86
Iowa State University	84
Washington State University	84
University of Colorado at Boulder	83
Colorado State University	82
Oregon State University	81
Oklahoma State University - Main Campus	80

COMPARISON WITH **INTERNAL** PEERS	Freshman Retention Rate
University of Georgia	93
Michigan State University	90
North Carolina State University at Raleigh	90
Texas A & M University**	89
Virginia Polytechnic Institute and State University***	87
Iowa State University	84
Washington State University	84
University of Colorado at Boulder	83
Colorado State University	82
Oregon State University	81
Kansas State University	80
University of Nebraska at Lincoln	80
Oklahoma State University - Main Campus	80
University of Mississippi Main Campus	76

RETENTION AND GRADUATION OF ALL STUDENTS

Freshman Retention (return to the second fall)

- Retention rates stabilized above 80% beginning in 1990, and have ranged between 81% and 83% in recent years.

- The 83% rate for the cohort entering 2003 is the highest rate in recent years, but the rate for 2004 returned to the previous level of 82%.

- The CCHE performance goal is 85.1% by December 2008, requiring an increase of 3.1 percentage points.

- The long-term stability of the rate dramatizes the challenge inherent in increasing the retention rate. Status quo or marginal efforts will not move the rate.

Source: OBIA

Freshman Retention Trend

Freshman Retention: Recent Years
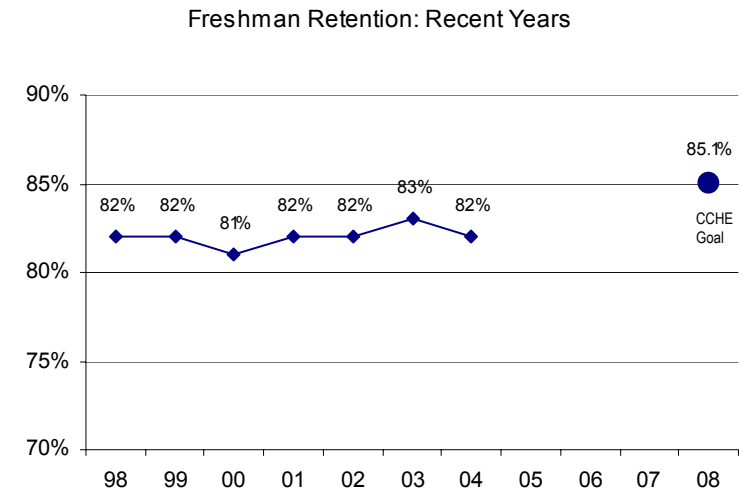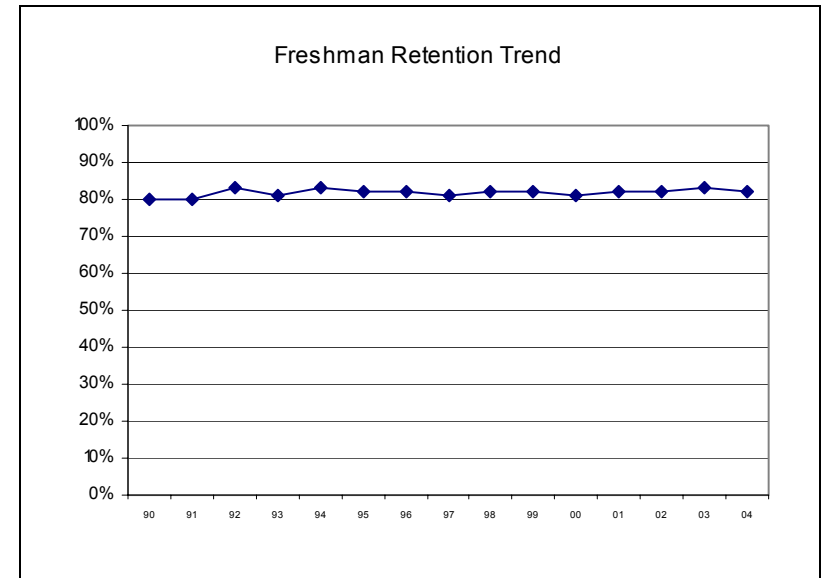
Graduation

Graduation Rates

- Graduation rates have trended slightly upward for 4-year, 5-year, and 6-year graduation rates.

- The six-year graduation rate reached a high of 63.5% for the cohort entering 1998, and was 62.5% for the most recent cohort tracked (1999).

Source: OBIA

- The CCHE 6-year graduation goal is 63.6% by December 2008. The difference between the most recent 6-year graduation rate (62.5% for the class entering 1999) and the CCHE goal (63.6%) is 1.1 percentage points. While that difference does not appear large, it should be noted that the cohort that will be measured by December 2008 will be the one that entered in the fall of 2002. In other words, the class that will be measured in December 2008 is already in its third year, and so the interventions that can be employed to affect graduation rate for this class are limited. (The cohort entering 2002 is performing similarly to the 2000 cohort, at least through spring semester 2005.)

Source: OBIA

Graduation Rates

□ After 4 Years ■ After 5 Years □ After 6 Years
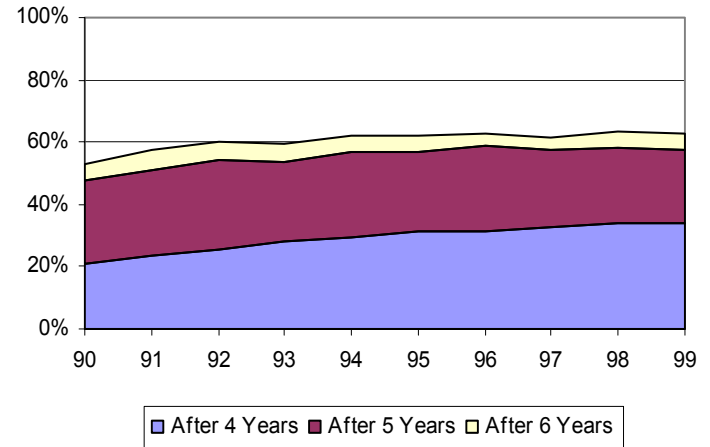
Six-Year Graduation
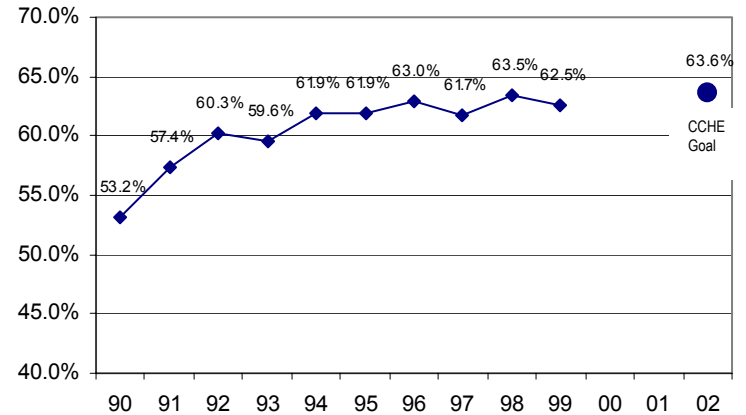
RETENTION AND GRADUATION BY DEMOGRAPHIC
SUBPOPULATION

Five-year Persistence by Gender

Differences by Gender

- Although the five-year persistence rates for men and
women are somewhat similar, the pattern of graduation
is very different. Women are more likely to graduate in
four years.

Source: OBIA
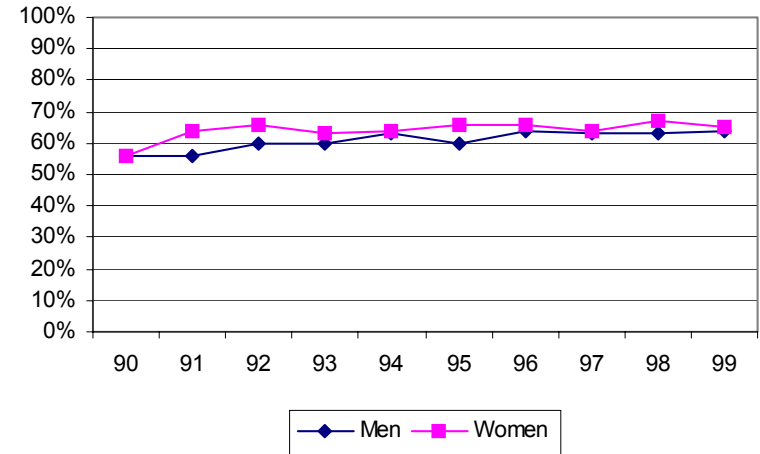
Graduation by Gender, 1999 Cohort
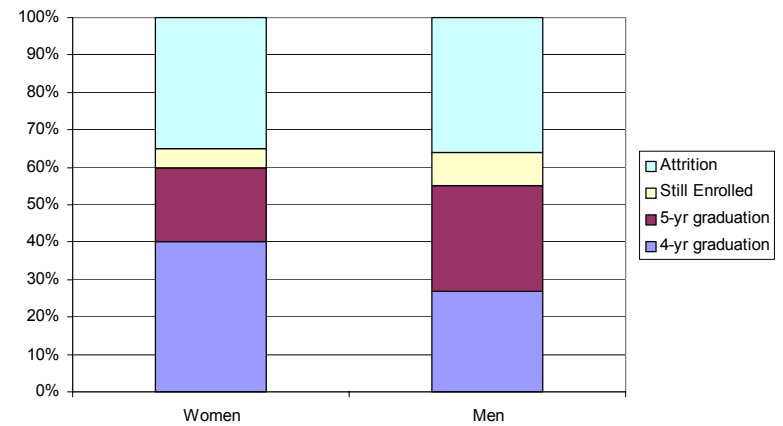
Source: from OBIA data

Persistence by Ethnicity

- White students (including those who did not report ethnicity) have been retained at higher rates than students of color. The retention rate gap between the two has narrowed in recent years to single digits, with the exception of the 1999 cohort. The gap for the Fall 2000 cohort was 7 percentage points.

Source: OBIA

Five-Year Persistence by Ethnicity

Difference in Persistence Rates Over Time (Average of Cohorts from 1995-2002)
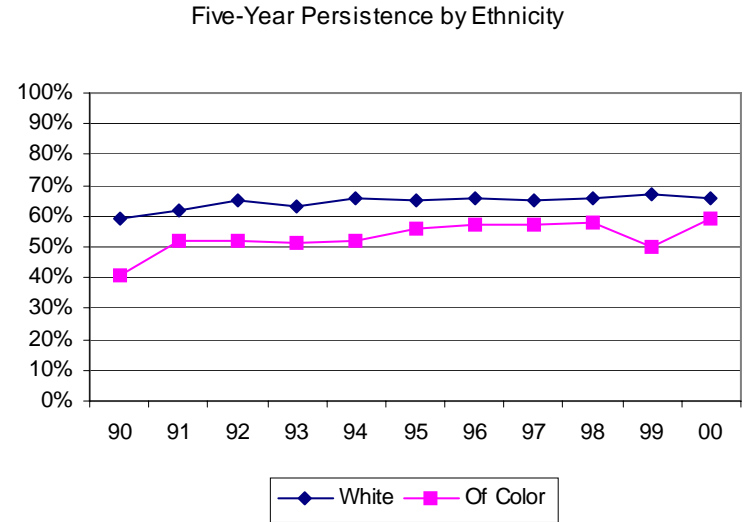
- The retention rate of students of color, on average, is only a few percentage points lower than that of white students in the first year. However, on average the gap between the rates for two groups grows each succeeding year, amounting to an 8 percentage point gap by the return to the sixth fall. The progressive persistence gap between students of color and white students suggests that retention efforts for students of color should focus not only on the early semesters, but should continue with considerable intensity through the remaining semesters.

Derived from OBIA data
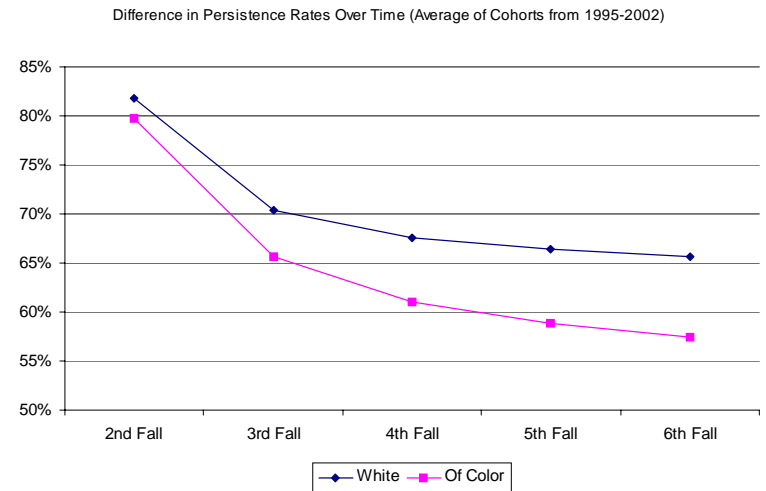
Persistence by Parent Educational Attainment

- Student retention varies by the level of parent education attainment. Students whose parents did not complete a baccalaureate degree are commonly termed "first generation college students," or "first generation students."

- About 27% of entering freshmen are first generation (from student responses on the admissions application).

- Students who are first generation have a first-year retention rate that is, on average, 5 percentage points lower than those students who are not first generation.

Source: CASA Study

First-Year Retention by Parent Educational Attainment
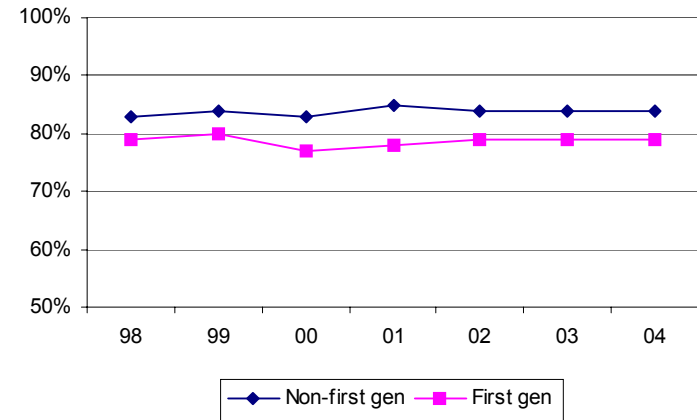
Graduation by Parent Educational Attainment

- The six-year graduation rate of first generation students was 12 percentage points lower for the class of 1998, and 13 percentage points lower for the class of 1999 as compared to their non-first generation peers.

Source: CASA Study

Six-Year Graduation and First Generation Status
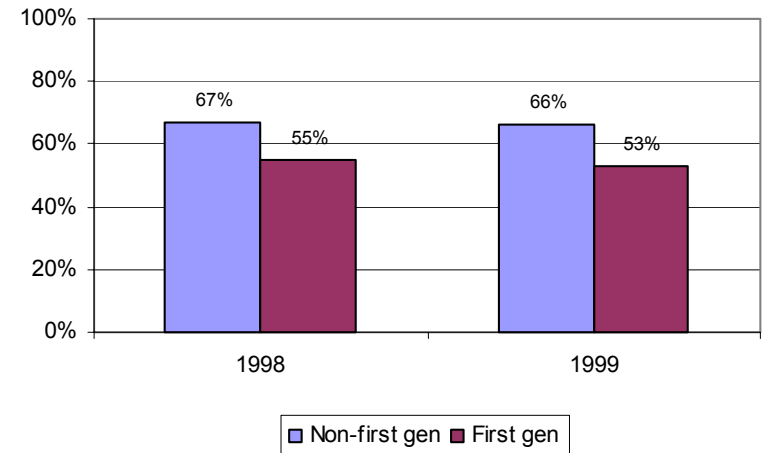
Persistence by Residency

- Colorado residents are retained at rates that exceed those of nonresidents (out-of-state students). The gap between the two rates had been narrowing to single digits in recent years (1996-1999), but reached 10% for the class of 2000.

Source: OBIA

Five-Year Persistence by Residency
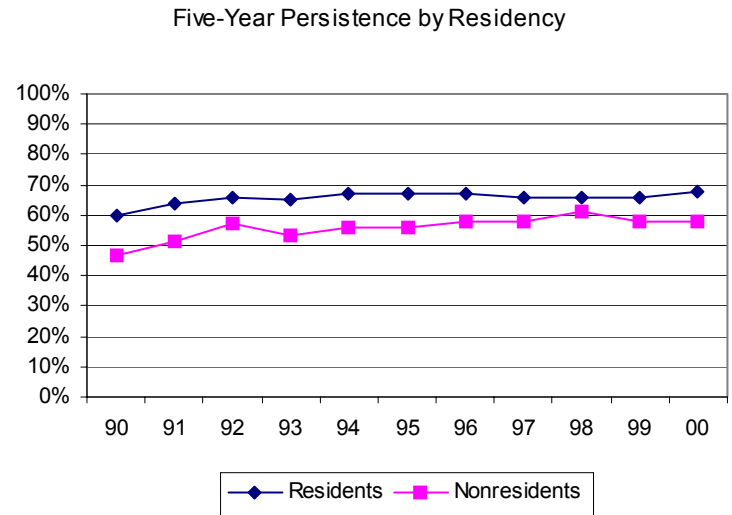
- Across the colleges, residents are retained to the second year at higher rates than nonresidents. The differential is lowest in the College of Agriculture (1 percentage point) and highest in the College of Liberal Arts, College of Veterinary Medicine and Biological Sciences, and the Intra-University category (all at 8 percentage points).

Source: CASA Study

Retention by College and Residency: Average of Seven Cohorts (1998-2004)

86
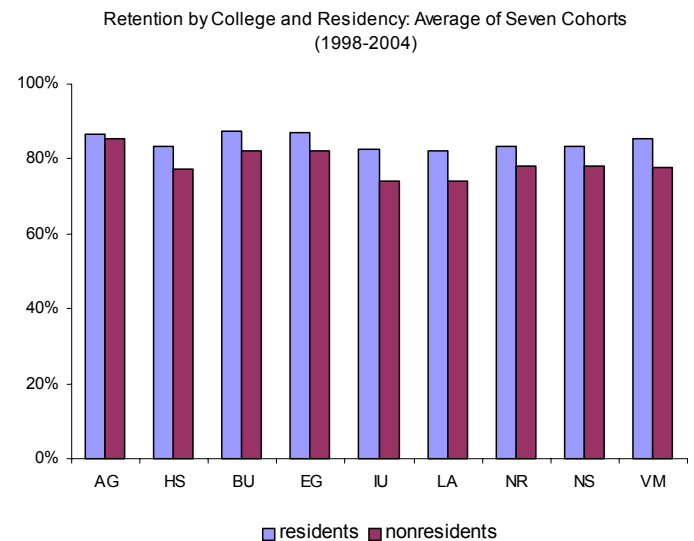
Retention by Students Who Enter as Transfers

- Transfers have accounted for a sharply declining number and proportion of new students each year, from a high of 50.8% in academic year 1997-98 (the sum of students entering fall and spring semesters) to a low of 32.7% in academic year 2004-2005.

Source: Derived from OBIA data

- Even with the declining trend, students who entered the University as transfers compose a vital part of the University enrollment, accounting for about a third of new students in academic year 2005-2006.

Transfers as a Percent of New Students, Academic Year 2005-2006

Transfers, 33.6%

Freshmen, 66.4%

Source: Derived from OBIA data

- Transfer student retention is more difficult to assess, since transfers are diverse in terms of prior institution (two-year, four-year; number of prior institutions) and number of credits transferred. In addition, student academic credentials are difficult to compare, since there is no equivalent of the Admissions Index for transfer students. The most comprehensive study of transfer students was undertaken by the Undergraduate Student Retention Council and OBIA in 2000 (http://www.colostate.edu/Depts/OBIA/pdf/retention/transfer.pdf). That study indicated that transfer students earn somewhat lower grade point averages and graduate at somewhat lower rates after developing equivalence between transfers and new freshmen on the basis of credits earned. However, the difference between transfers and traditional freshmen was not as great as believed by many on campus.

<u>Retention by Financial Need</u>

Analysis of financial need as a retention factor was not completed because of problems encountered with the data. The literature indicates that the income background of students and the financial aid packaging and met need produce significant retention effects. Analysis will continue in the future.

Retention by Admissions Index

- The Admissions Index is a proxy estimate of academic preparedness for college. Academic preparedness has been shown in retention literature to be a significant predictor of college success. At Colorado State, higher retention and graduation is associated with increasing Index scores. The graph shows the relationship between admissions score and six-year graduation rate. The size of the circle at each Index level represents the size of the population with that Index score.

Graduation Rate by Index, FA98 Cohort

Source: Derived from OBIA data

90
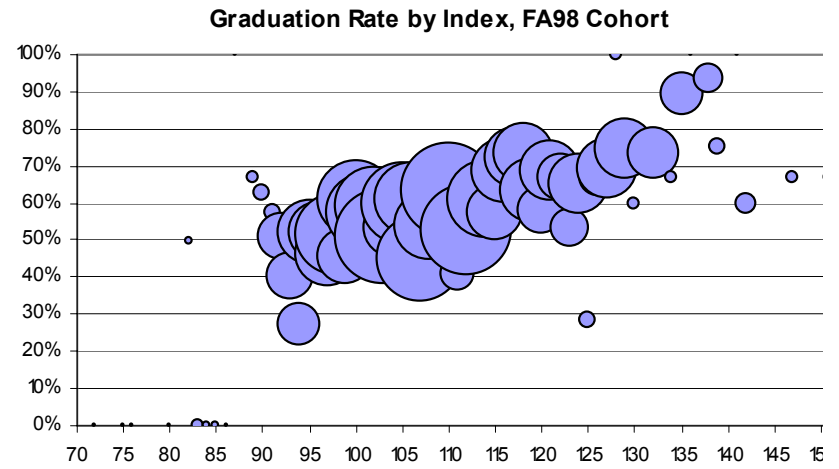
Index Trend for Entering Freshmen

As shown on the following page, the Index profile of entering freshman classes has changed over time. The proportion of students entering at Index levels of 110 or above increased from 1988 to 1993, but has been relatively stable since then. The proportion of students entering with Index scores below 90 declined over time, with few such students after 2002. (This is based on Index valid for each given entry term. The Index was recalculated in 2004, but figures shown are based on the earlier Index scale.)

It is striking that with the exceptions noted above, the profile of entering classes depicted in this graph has remained relatively static. (The graph does not show finer separations within Index ranges, where change may indeed have occurred.)

New Freshmen Entering 1988-2004 by Index Range

313 286 201 215 219 216 227 257 270 262 303 311 331 37 37 375 404

Index: <90   90-95   96-100   101-109   110+

92
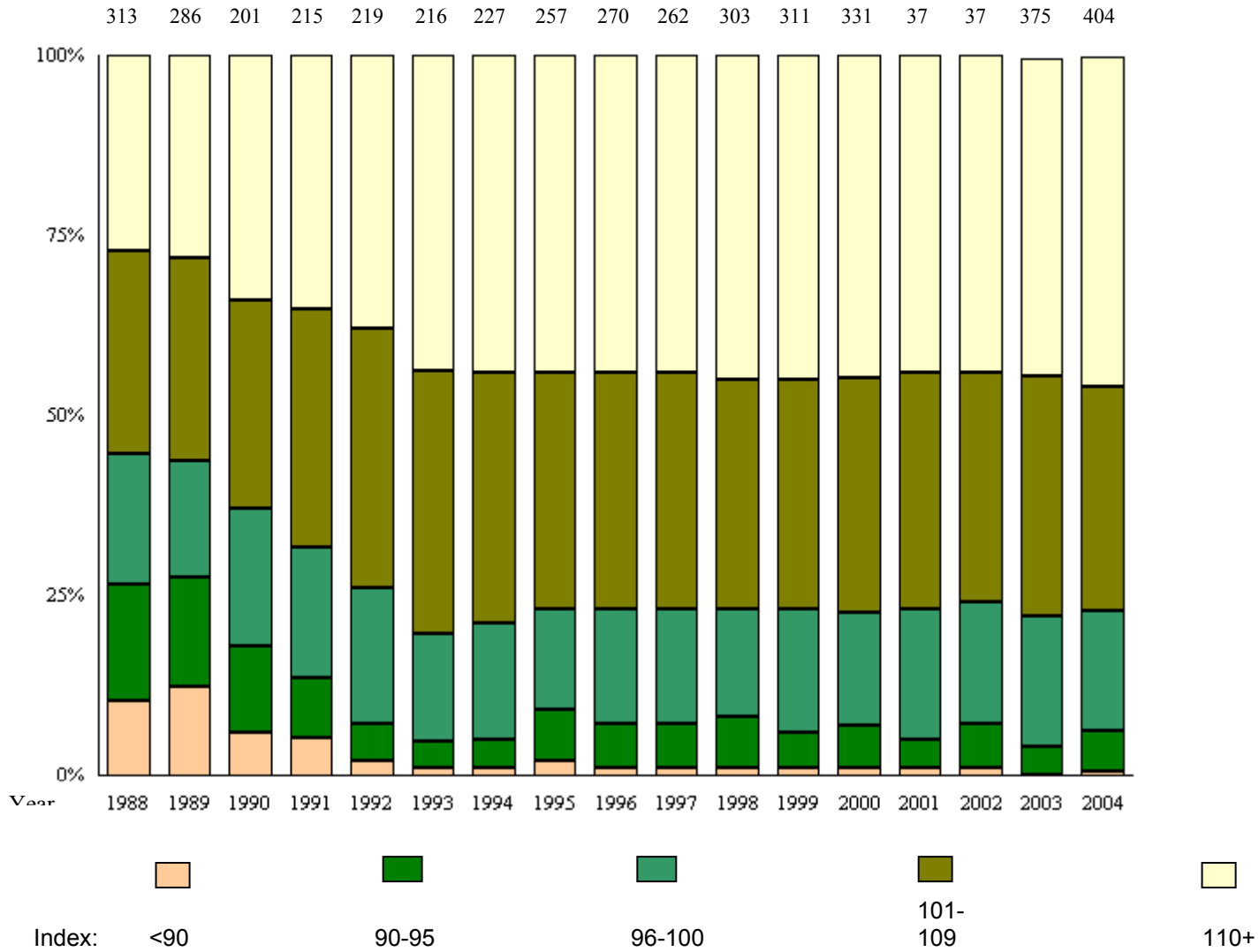
RETENTION BY UNIVERSITY-RELATED FACTORS

Timing of Departure

Attrition by Semester, expressed as a percent of total attrition
(Class of 1999)

- The pattern of departure at CSU is consistent with that noted in the literature; i.e., departure is concentrated in the early semesters. In the graph, each semester's attrition is expressed as a percent of total attrition for the class. Of all the students who left the University from the class of 1999, one-third (33%) left at end of the second semester, measured at the "return to second fall."

Source: Derived from OBIA data

- When examined by academic year, it is apparent that half of all attrition for the class occurs within the first year, with another third occurring within the second year. In other words, 83% of all students who left did so within the first two academic years. It is also the case that sophomore year demands attention, since it accounts for the next highest proportion of departures, after freshman year. These patterns point out the importance of interventions in the first two years.

Source: Derived from OBIA data

Attrion by year, expressed as a percent of total attrition
(Class of 1999)
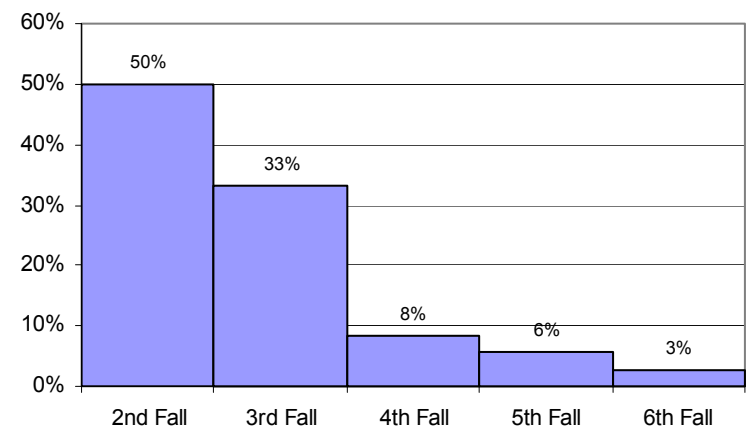
Persistence by College

- The average rate of graduation and persistence after five years, averaged for five cohorts (cohorts entering 1995 through 1999), ranges from 74% in the College of Business to 61% in the Colleges of Liberal Arts and Natural Sciences. (For this purpose, college membership is defined as the college home of the major in which students are originally admitted.)

Source: Derived from
OBIA data

Persistence Rates After Five Years, Average of Five Cohorts
(1995-1999)
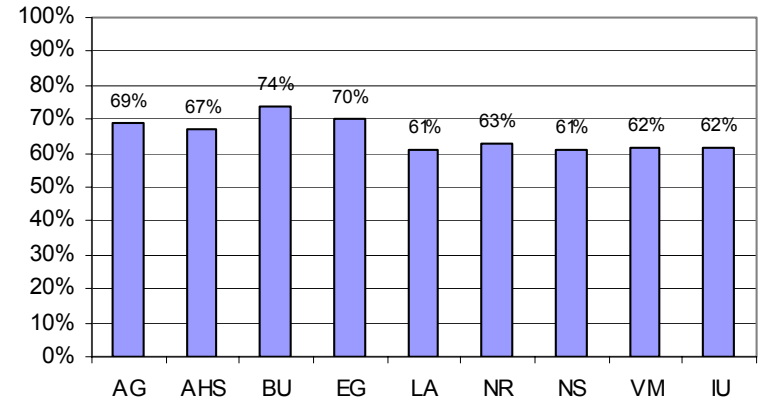
- Accounting for Index, there appears to be some spread in five-year retention rates at high and low ends (though the numbers are small at both ends, potentially exaggerating differences). Some colleges seem to be more successful in retaining students at the ends of the Index scale than others.

Source: CASA Study

Persistence Rates After Five Years, by College and Index Range

94
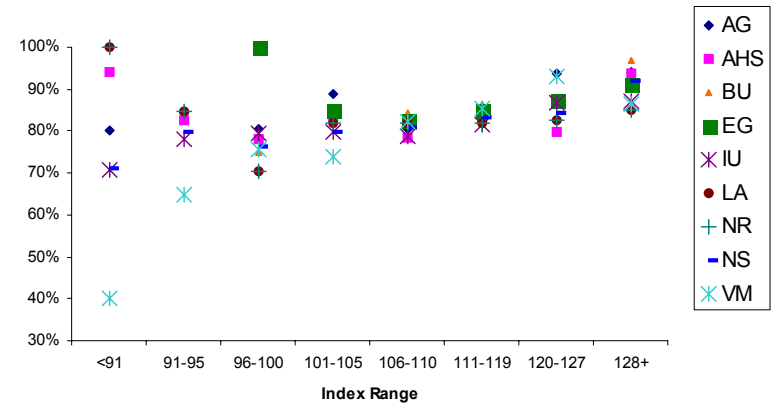
<u>Retention by Major</u>

- Retention varies by the major originally declared by students. Department-level retention data prepared by OBIA in 2001 shows the average five-year graduation rate by major. (See following page.) See also OBIA Departmental Retention Studies, http://www.colostate.edu/Depts/OBIA/pdf/retention/by_dept/200103/main_cover_intro.pdf

  Note: Some majors have very few incoming new freshmen and this can impact their rates.

Average Five Year Graduation Rates by Department
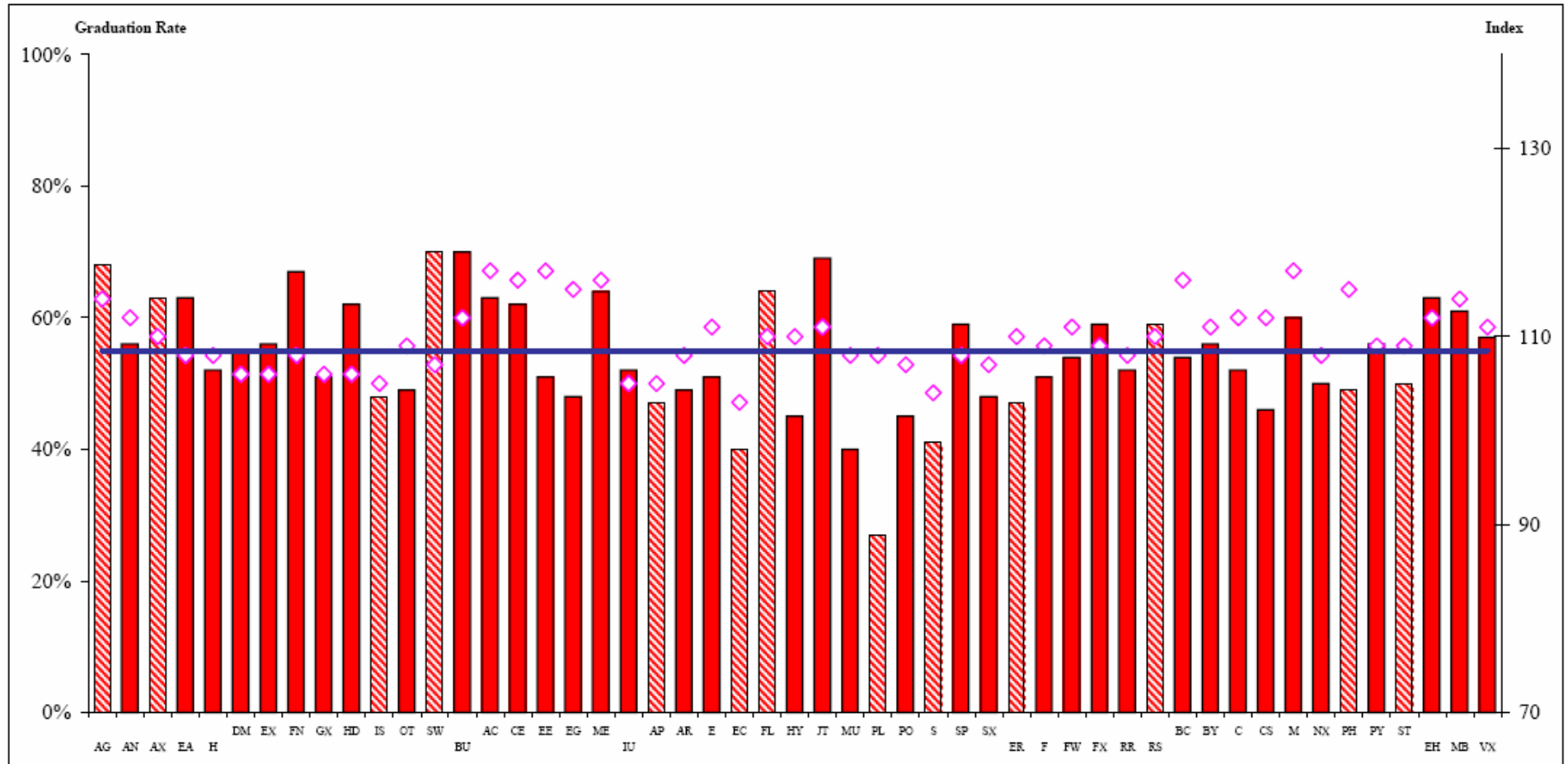
◇   Average index for new freshmen 1992-96. Average Index of 109 is plotted on graduation line. Range of plotted Indexes is 103-117.

▨   Department has less than 10 new freshmen on average.

▬▬   Average university 5 year graduation rate. (55%)

These graduation rates are an average for new freshmen entering each department fall 1991-1995. (Business - 1994-95)

Rates are for graduation at CSU not necessarily in starting department.

Retention and Change of Major

- Literature on choice of major and career emphasizes the extent to which new freshmen are uncertain about major and career, and the appropriateness of that uncertainty given students' developmental level. Data from the class of 1998 show that 60% of entering freshmen declare a major, while others enter college open option, university open option, or open option seeking- categories.

Decision at Entry to University (Class of 1998)
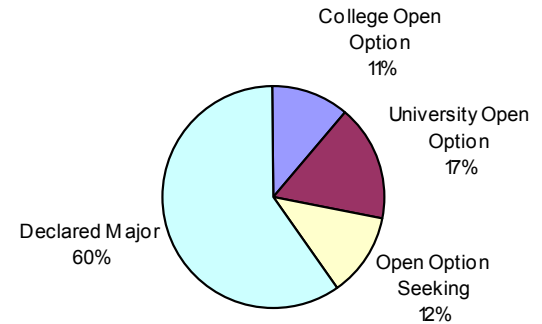
Source: Derived from OBIA data

- Of those who enter having declared a major, many will subsequently change to another major. Of those who persisted at the University, 54% were still enrolled or had graduated in that same major five years later, while the other 46% who persisted had changed to another major.

  Note: All of Business is one major.

Percent retained or graduated in the originally-declared major, by college (Class of 1998)

Source: Derived from OBIA data

97
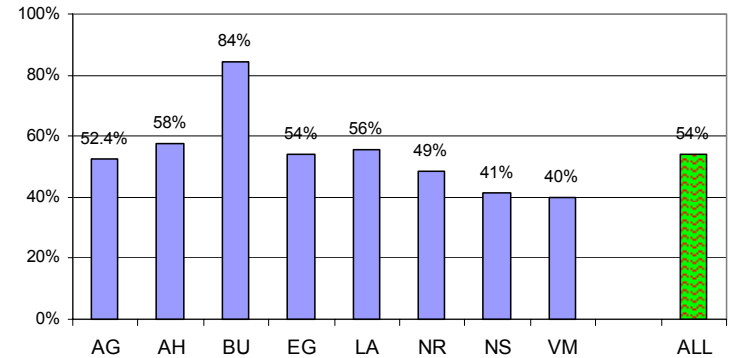
Frequency of Major Change

Of the students who originally enrolled in the class of 1998
and persisted at the University, only 31%, or less than a third,
graduated or were still enrolled in an originally-declared major
five years later. These data argue for a developmental
advising approach that assists students in exploring and
choosing majors.

Source: OBIA

Frequency of Major Change Among Graduates

4 changes
1%

3 changes
6%

2 changes
20%

no change
34%
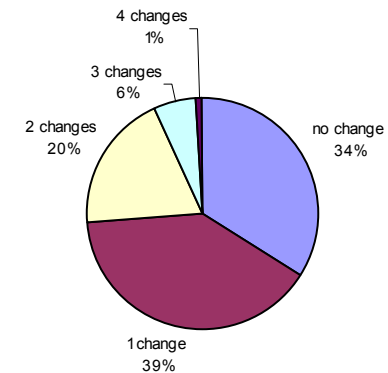
1 change
39%

Major Changing and Time-to-Graduation

- A study by OBIA and CASA of major-changing behavior
  among students in the class of 1996 showed that 73% of
  students made 0-1 major changes, 20% made two
  changes, and only 7% made 3-4 changes. As expected,
  those who changed major more frequently took longer to
  graduate.

Change of Major by Graduation for Class Entered in 1996

4yr grad   5 yr grad   Still Enrl   Attrition

☐ no change ■ 1 ☐ 2 ☐ 3 ■ 4 ☐ 5

98
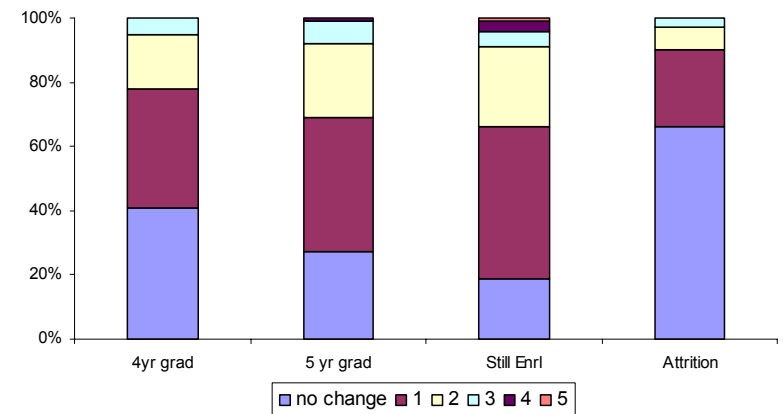
Source: OBIA

Retention by Grade Point Average

- As expected, the likelihood of departure increases as University GPA decreases. Students with GPAs below 2.0 depart at a 95% rate, while students with a 3.5-4.0 GPA depart at a 15% rate.

Source: OBIA

Rate of Attrition by Last GPA
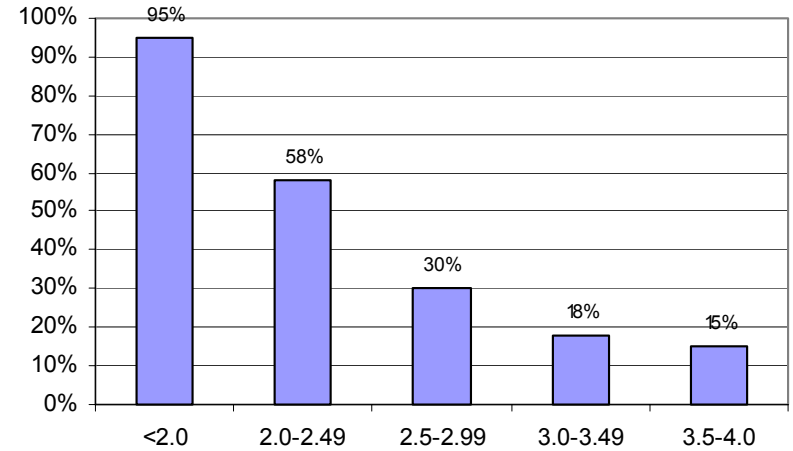
- At the same time, it should be noted that many students leave the University in good standing, and many with high GPA's. While students with GPA's below 2.0 accounted for just under a third of departures, 69% of those who left the University did so while in good academic standing, and 28% of who left did so with GPA's above 3.0.

Source: Derived from OBIA data

Student Departure by Last GPA, Class of 2000
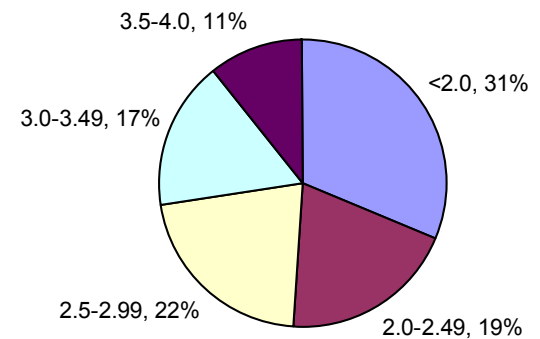
Retention and Academic Standing

- 14.7% (560) of new freshmen (FA03) were placed on academic probation (PRB1) at the end of their first semester. Of these, 29.6% (166) returned to good standing by the end of the SP04 semester, 55.7% (312) proceeded to PRB2 status, and 14.6% (82) left the University.

- About 22% of students who enter as freshmen are placed on probation at some time during their academic career at the University. (Additional studies are planned to examine the connection between Index and grade point average.)

- A significant number of students are on academic probation at any one time. In the last two academic years, there were roughly 1,550 students in the fall semesters and 1,300 students in the spring semesters that were on either PRB1 or PRB2.

- A newly developed analytical tool will allow much more detailed study of probationary student patterns and outcomes in the future.

Source: CASA Study

Retention and Course Registration

- Certain courses account for a high number or high proportion of D's and F's. The chart shows the courses in which 15% or more of the freshmen enrolled in the course earned either D or F grades, sorted by the percent of total D's and F's.

Source: OBIA

Semester: Spring 2004

Course	total size	Freshmen in the class #	Freshmen in the class %	Total D's or F's for Freshmen #	Total D's or F's for Freshmen %
PY 250	199	41	20.6%	21	51.2%
C CC111	448	287	64.1%	91	31.7%
M CC160	199	103	51.8%	28	27.2%
M CC161	240	129	53.8%	32	24.8%
S CC105	349	126	36.1%	30	23.8%
BZCC120	200	84	42.0%	19	22.6%
C CC113	710	382	53.8%	77	20.2%
APCC140	190	75	39.5%	15	20.0%
C CC107	384	150	39.1%	28	18.7%
ARCC100	728	317	43.5%	59	18.6%
BZCC110	353	127	36.0%	23	18.1%
BSCC122	350	133	38.0%	24	18.0%
S CC100	659	303	46.0%	53	17.5%
LS 103	440	285	64.8%	45	15.8%
JTCC100	397	191	48.3%	30	15.7%

Semester: Fall 2004

Course	total size	Freshmen in the class #	Freshmen in the class %	Total D's or F's for Freshmen #	Total D's or F's for Freshmen %
PHCC141	302	194	64.2%	76	39.0%
PLCC100	779	313	40.2%	86	27.5%
G CC122	192	73	38.0%	17	23.3%
S CC100	807	339	42.0%	78	23.0%
C CC107	443	102	23.0%	23	22.5%
C CC111	1994	611	60.8%	126	20.6%
S CC105	342	153	44.7%	30	19.6%
M CC160	310	187	60.3%	36	19.3%
ECCC101	446	125	28.0%	23	18.4%
NRCC130	275	121	44.0%	22	18.2%
G CC 120	254	122	48.0%	22	18.0%
BZCC110	362	225	62.2%	36	16.0%
POCC101	569	207	36.4%	32	15.5%

- It has been theorized that certain courses or course combinations may be common to many students who have been placed on probation. An analysis of the registrations of those students with grade point averages below 2.0 shows the following courses in which an F was earned. (The column "Completed" includes students who took and completed the course, and those who earned W's or Incompletes.)

Sort by number of those taking the course			
Course	**Completed**	Failed	% Failed
COCC150	473	169	35.7%
PYCC100	315	129	41.0%
M CC118	297	0	0.0%
M CC117	271	0	0.0%
IU 193	184	28	15.2%
C CC111	165	109	66.1%
M CC124	148	0	0.0%
PLCC100	147	113	76.9%
C CC112	140	53	37.9%
FNCC150	134	76	56.7%
LSCC102	127	74	58.3%
EXCC145	121	34	28.1%
S CC100	120	88	73.3%
POCC131	117	56	47.9%
SPCC200	112	25	22.3%
M CC125	112	0	0.0%
ARCC100	100	42	42.0%
EXCC123	98	35	35.7%
HYCC151	97	52	53.6%
M CC126	93	0	0.0%

Sort by number of those taking and failing the course			
Course	Completed	**Failed**	% Failed
COCC150	473	169	35.7%
PYCC100	315	129	41.0%
PLCC100	147	113	76.9%
C CC111	165	109	66.1%
S CC100	120	88	73.3%
FNCC150	134	76	56.7%
LSCC102	127	74	58.3%
POCC131	117	56	47.9%
C CC112	140	53	37.9%
HYCC151	97	52	53.6%
ARCC100	100	42	42.0%
EXCC123	98	35	35.7%
EXCC145	121	34	28.1%
IU 193	184	28	15.2%
SPCC200	112	25	22.3%
M CC118	297	0	0.0%
M CC117	271	0	0.0%
M CC124	148	0	0.0%
M CC125	112	0	0.0%
M CC126	93	0	0.0%

Sort by percent of those taking and failing the course			
Course	Completed	Failed	**% Failed**
PLCC100	147	113	76.9%
S CC100	120	88	73.3%
C CC111	165	109	66.1%
LSCC102	127	74	58.3%
FNCC150	134	76	56.7%
HYCC151	97	52	53.6%
POCC131	117	56	47.9%
ARCC100	100	42	42.0%
PYCC100	315	129	41.0%
C CC112	140	53	37.9%
COCC150	473	169	35.7%
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IU 193	184	28	15.2%
M CC118	297	0	0.0%
M CC117	271	0	0.0%
M CC124	148	0	0.0%
M CC125	112	0	0.0%
M CC126	93	0	0.0%

Source: CASA Study

REGRESSION ANALYSIS OF MULTIPLE FACTORS

Dr. Michael Lacy, Associate Professor of Sociology, contributed considerable time and expertise to work with the Research group on a study of multiple factors potentially affecting first year retention. The study focused on a number of the independent variables available in the CASA database. Using logistic regression, the study examined the relationship between those variables and the independent variable.

Logistic Regression Analysis with Multiple Factors: Overall Observations

- These analyses allow one to estimate retention/graduation likelihood while controlling for a variety of factors. The analyses presented provide opportunity for many observations of interest, only a few of which are presented here.

- First Year Retention. After adjusting for all factors in the model, nonresidents are considerably less likely to return than residents. Similarly, the odds of first generation students, students with unmet financial need, and lower Index are less likely to return. First semester grade point average is a particularly strong predictor of likelihood of return.

- Six Year Graduation. Adjusting for all factors in the model, nonresidents, Asian Americans, African Americans, Hispanics, first generation students, and those with unmet financial need are less likely to graduate within six years. Again, first semester grade point average is a strong predictor of likelihood of graduation.

Logistic Regression Analysis with Multiple Factors: First-Year Retention

The first phase of the study addressed First Year Retention, or return to the second fall. The population included new freshmen who entered the University in the entering cohorts beginning Fall 1998 through Fall 2004.

The data in the charts show odds ratios for particular variables, controlling for other variables in the models. Where the odds ratio is greater than 1.0, there is a greater chance of retention. An odds ratio <1.0 indicates a lesser chance of retention. Among the observations from the data are these:

Residency: Residents are about 1.5 times as likely to return, accounting for Index, gender, ethnicity, and first generation status. Even adjusting for first semester GPA, the effect of residency remains.

First Generation Status: First generation students are about .8 times as likely (30% less likely) to return, accounting for Index, ethnicity, gender, and residency.

Gender: Women are .85 times as likely to return as men.

Ethnicity: While Native Americans and Hispanics showed significant differences in retention likelihood when only ethnicity was involved, the differences diminished when additional variables were introduced, beginning with the addition of first generation status in model 6 of the chart.

Base Rate: 82.5% returned for second year, among sample

Various Logistic Regression Models of "Did Student Return for Second Year?"

Results Expressed as Odds Ratios.

Variable	Model1 OR/se	Model 2 OR/se	Model 3 OR/se	Model 4 OR/se	Model 5 OR/se	Model 6 OR/se	Model 7 OR/se	Model 8 OR/se
Asian/Pac	1.065	1.044	1.045	1.042	1.04	1.012	0.981	0.951
	0.1292	0.1265	0.1264	0.1087	0.1084	0.105	0.1015	0.0982
Af Amer	1.189	1.153	1.16	1.482***	1.481***	1.191	1.1	1.098
	0.1802	0.1743	0.1754	0.2041	0.2041	0.1617	0.1485	0.1479
Hispanic	1.055	1.03	1.034	1.021	1.02	0.926	0.849**	0.867**
	0.0937	0.0912	0.0915	0.0751	0.075	0.0674	0.0611	0.0622
Nat Amer	0.912	0.893	0.896	0.789	0.785	0.760*	0.730*	0.713**
	0.1827	0.1785	0.1793	0.1282	0.1275	0.1229	0.1174	0.1144
Female	0.854***	0.848***	0.847***	0.955				
	0.0394	0.0391	0.0391	0.0362				
CCHE	0.997	0.997	0.997	1.024***	1.024***			
	0.0025	0.0025	0.0025	0.002	0.002			
First Gen	0.809***	0.784***	0.786***	0.706***	0.704***	0.691***		
	0.0406	0.0389	0.039	0.0289	0.0288	0.0282		
Colo Res	1.503***	1.502***	1.492***	1.543***	1.542***	1.522***	1.472***	
	0.0762	0.0761	0.0755	0.0649	0.0649	0.0637	0.0612	
GPA term 1	2.108***	2.111***	2.103***					
	0.0584	0.0585	0.0581					
Open Option?	0.866**	0.867**						
	0.0526	0.0526						
Fin. Need?	0.780***							
	0.0437							
McFadden R^2	0.0652	0.0639	0.0635	0.0174	0.0174	0.0092	0.0049	0.0005
chi²	940.301	921.217	915.774	326.081	324.595	172.524	92.332	8.59
N	18975	18975	18975	20183	20183	20183	20183	20183
df	11	10	9	8	7	6	5	

* p < 0.1   ** p < 0.05   *** p < 0.01

Explanatory Variables:

First ethnic category chosen;

Gender (female = 1)

First generation college student (yes = 1);

Colorado resident (yes = 1);

First term GPA;

Started CSU as university open option (yes = 1)?

Is total unmet financial need greater than 0? (yes = 1)

First Semester GPA: First semester grades play a large part in students' likelihood of returning. One unit change (1.0 GPA point) results in doubling the retention chances.   [1 SD = ~.8 GPA points]

Financial Need: Because of data issues the only variable measured was "remaining unmet need after the award of financial aid." Those with unmet need are about .8 times as likely (or 20% less likely) to return, even adjusting for all other factors. Net of other factors, unmet need makes a difference.

Admissions Index: Index shows a significant influence in models 5 and 4 (on the chart on the previous page), but the effect diminishes as other variables are introduced.

Regression Analysis of Taking Stock: First-Year Retention [data not shown]

Taking Stock at Mid-Semester is an early warning and intervention program that is conducted by CASA and the Residence Life department of Housing and Dining Services. As part of the program, participating students (about 2,400 new freshmen) complete a self-assessment inventory related to their experience by the fifth week of their first semester. The analysis of *Taking Stock Inventory* data in this regression analysis is not complete. However, a preliminary analysis of student Inventory responses on questions that together relate to the concept of "integration" or "belonging" on campus showed significant associations with retention outcomes.

Based on this preliminary analysis, we conclude that a more detailed analysis conducted for the purpose of developing a profile of "stayers" and "leavers" from Taking Stock data could be fruitful, and could provide another dimension for proactive intervention in first time students' first semester.

Logistic Regression Analysis with Multiple Factors:
Graduation in Four Years or Less

Significant background factors with all variables in the model include Hispanic, Female, CCHE Index, First Gen, and Open Option.

- Females are about 1.8 times as likely as males to graduate in four years, accounting for other factors.
- Being Open Option at the point of initial entry makes four-year graduation about .7 times as likely as compared to students who are not Open Option.
- Being first generation makes it about .8 times as likely as compared to students who are not first generation.
- Being Hispanic makes it about .7 times as likely as compared to White students.
- Positive unmet need remaining after financial aid award makes it about .9 times as likely as not having unmet need remaining.
- Ethnicity other than Hispanic does not show significant difference.
- Although CCHE Index was a statistically significant factor, its impact is smaller than some of the other factors previously listed.

The performance factor of 1st semester GPA indicates a 2.5 times greater likelihood (for a full 1.0 point increase in GPA) of four-year graduation.

GRADUATION IN FOUR YEARS OR LESS

	Model 1 OR/SE	Model 2 OR/SE	Model 3 OR/SE	Model 4 OR/SE	Model 5 OR/SE	Model 6 OR/SE	Model 7 OR/SE	Model 8 OR/SE
Asian Pacific	0.908	0.899	0.907	0.811*	0.846	0.799**	0.783**	0.782**
	0.1077	0.1066	0.1074	0.0916	0.0944	0.0873	0.0853	0.0852
Afr. Amer.	1.013	1.004	1.032	1.006	1.051	0.721**	0.671***	0.672***
	0.1503	0.1487	0.1522	0.1435	0.148	0.0988	0.0915	0.0916
Hispanic	0.714***	0.708***	0.716***	0.696***	0.714***	0.621***	0.582***	0.583***
	0.0639	0.0633	0.0639	0.0602	0.0611	0.0522	0.0485	0.0485
Native Amer.	0.786	0.784	0.792	0.711*	0.798	0.758	0.743	0.742
	0.164	0.1633	0.1652	0.1433	0.1582	0.147	0.1437	0.1435
Female	1.815***	1.809***	1.789***	2.015***				
	0.0757	0.0754	0.0743	0.0808				
CCHE Index	1.012***	1.012***	1.014***	1.042***	1.043***			
	0.0023	0.0023	0.0023	0.0021	0.002			
First Gen?	0.781***	0.768***	0.768***	0.723***	0.749***	0.720***		
	0.0374	0.0364	0.0364	0.0331	0.0338	0.0319		
CO Resident.	1.054	1.056	1.043	1.081*	1.071	1.038	1.013	
	0.0506	0.0506	0.0499	0.05	0.0488	0.0462	0.0449	
1st Sem GPA	2.528***	2.532***	2.499***					
	0.0871	0.0872	0.0857					
Open Option?	0.690***	0.690***						
	0.0401	0.0401						
NeedAbove0?	0.885**							
	0.0473							
r2_p	0.1128	0.1124	0.1098	0.057	0.0376	0.007	0.0036	0.0036
chi2	1820.063	1814.847	1772.97	920.088	606.616	113.685	57.879	57.8
N	12329	12329	12329	12329	12329	12329	12329	12329
df_m	11	10	9	8	7	6	5	4

* p < 0.1   ** p < 0.05   *** p < 0.01

All ethnic effects are relative to White/Anglos.

OR = "Odds ratio." This tells how much a one-unit increase in this variable is predicted to *multiply* the odds of graduating in 4 years of less. The "se" figure is the standard error, which is an indication of the precision of the odds ratio If the se is big relative to the *OR* you shouldn't put much faith in the *OR*.

Logistic Regression Analysis with Multiple Factors: Graduation in Five Years or Less

Significant background factors with all variables in the model include Asian Pacific, Hispanic, Female, First Gen, CO Resident, Open Option, and Need Above 0.

- Colorado residents are about 1.3 times more likely than nonresidents, and Females about 1.1 times as likely as males, to graduate in five years accounting for other factors.
- Being first generation makes it about .7 times as likely as students who are not first generation to graduate in five years.
- Being Asian American makes it about .7 times as likely as White students.
- Being Hispanic makes it about .8 times as likely as White students.
- Positive unmet need remaining after financial aid award makes it about .8 times as likely as not having unmet need remaining.
- Being Open Option at makes four-year graduation about .8 times as likely as students who are not Open Option.
- Ethnicity other than Asian and Hispanic does not show significant difference.
- CCHE Index shows no significant difference.

The performance factor of 1st semester GPA indicates a 2.6 times greater likelihood (for a full 1.0 point increase in GPA) of four-year graduation.

GRADUATION IN FIVE YEARS OR LESS

	Model 1 OR/SE	Model 2 OR/SE	Model 3 OR/SE	Model 4 OR/SE	Model 5 OR/SE	Model 6 OR/SE	Model 7 OR/SE	Model 8 OR/SE
Asian Pacific	0.697***	0.685***	0.690***	0.594***	0.603***	0.564***	0.554***	0.545***
	0.091	0.089	0.09	0.072	0.073	0.067	0.066	0.065
Afr. Amer.	0.828	0.808	0.815	0.847	0.861	0.632***	0.574***	0.578***
	0.134	0.131	0.132	0.13	0.132	0.095	0.085	0.086
Hispanic	0.820**	0.804**	0.808**	0.764***	0.768***	0.686***	0.628***	0.636***
	0.076	0.076	0.068	0.069	0.06	0.055	0.055	
Native Amer.	0.699	0.683*	0.686	0.605**	0.629**	0.595**	0.580***	0.571***
	0.162	0.158	0.159	0.131	0.135	0.126	0.122	0.12
Female	1.129**	1.121**	1.119**	1.289***				
	0.054	0.054	0.054	0.058				
CCHE Index	1.002	1.001	1.002	1.034***	1.035***			
	0.003	0.003	0.003	0.002	0.002			
First Gen?	0.689***	0.668***	0.669***	0.638***	0.646***	0.634***		
	0.037	0.036	0.036	0.032	0.033	0.032		
CO Resident.	1.280***	1.280***	1.271***	1.267***	1.265***	1.247***	1.196***	
	0.071	0.071	0.071	0.067	0.067	0.065	0.062	
1st Sem GPA	2.637***	2.641***	2.627***					
	0.094	0.094	0.093					
Open Option?	0.840***	0.840***						
	0.055	0.055						
NeedAbove0?	0.791***							
	0.047							
r2_p	0.113	0.112	0.111	0.037	0.034	0.014	0.007	0.006
chi2	1329.59	1314.2	1307.06	429.58	398.22	162.788	78.86	66.835
N	8859	8859	8859	8859	8859	8859	8859	8859
df_m	11	10	9	8	7	6	5	4

Logistic Regression Analysis with Multiple Factors: Graduation in Six Years or Less

Significant background factors with all variables in the model include Asian Pacific, Afr.Amer., Hispanic, First Gen, CO Resident, and Need Above 0.

- Colorado residents are about 1.3 times more likely than nonresidents to graduate within six years accounting for other factors.
- Being Asian American makes it about .6 times, African American about .6 times, and Hispanic about .7 times as likely as White students.
- Being first generation makes it about .7 times as likely as compared to students who are not first generation to graduate in five years.
- Positive unmet need remaining after financial aid award makes it about .8 times as likely as not having unmet need remaining.
- CCHE Index shows no significant difference, and neither does being female or open option.

The performance factor of 1st semester GPA indicates a 2.7 times greater likelihood (for a full 1.0 point increase in GPA) of four-year graduation.

GRADUATION IN SIX YEARS OR LESS

	Model 1 b/se	Model 2 b/se	Model 3 b/se	Model 4 b/se	Model 5 b/se	Model 6 b/se	Model 7 b/se	Model 8 b/se
Asian Pacific	0.591***	0.587***	0.588***	0.550***	0.553***	0.504***	0.489***	0.479***
	0.0973	0.0965	0.0967	0.0848	0.0851	0.0764	0.0736	0.0719
Afr. Amer.	0.647**	0.637**	0.637**	0.749	0.757	0.561***	0.520***	0.520***
	0.1311	0.129	0.129	0.1457	0.1469	0.1058	0.0973	0.0972
Hispanic	0.749**	0.735**	0.736**	0.717***	0.722***	0.659***	0.605***	0.613***
	0.0909	0.089	0.089	0.0823	0.0827	0.0745	0.0676	0.0684
Native Amer.	0.654	0.639	0.64	0.544**	0.558**	0.540**	0.510***	0.501***
	0.1859	0.1815	0.1818	0.1449	0.1481	0.1407	0.1319	0.1292
Female	1.024	1.018	1.017	1.190***				
	0.0629	0.0625	0.0625	0.0689				
CCHE Index	0.999	0.999	0.999	1.033***	1.034***			
	0.0035	0.0035	0.0034	0.0031	0.003			
First Gen?	0.655***	0.640***	0.641***	0.609***	0.614***	0.608***		
	0.0446	0.0432	0.0432	0.0389	0.0391	0.0383		
CO Resident.	1.322***	1.321***	1.318***	1.281***	1.277***	1.265***	1.209***	
	0.0931	0.093	0.0926	0.0855	0.0852	0.0833	0.0788	
1st Sem GPA	2.665***	2.665***	2.662***					
	0.119	0.1189	0.1185					
Open Option?	0.97	0.97						
	0.0803	0.0803						
NeedAbove0?	0.830**							
	0.0618							
r2_p	0.1133	0.1125	0.1124	0.0361	0.0349	0.0172	0.0087	0.0076
chi2	830.45	824.26	824.118	264.6	255.57	125.813	64.042	55.656
N	5782	5782	5782	5782	5782	5782	5782	5782
df_m	11	10	9	8	7	6	5	4

Logistic Regression Analysis with Multiple Factors: Next Steps

Plans are being developed to both amplify and refine the regression analysis. Among the research activities planned is the development of "archetypes" -- models of kinds of students with combinations of characteristics – with their predicted likelihood of success.

This regression analysis increases confidence in the factors which can be used in developing systems for early intervention.

INDICATORS OF THE QUALITY OF THE EDUCATIONAL EXPERIENCE

National Survey of Student Engagement

The National Survey of Student Engagement (NSSE) seeks to measure the quality of the student educational experience in a way that is not captured by such surveys as that *of U.S. News and World Reports.* Colorado State University participated in 2003 and 2005.

The NSSE Survey for 2005 had a response rate of 29%, from a sample of 483 first year students plus 483 senior level students. There were 529 participating institutions. Of the institutions, 45 were included as "selected peers." The selection of peers was done by NSSE.

NSSE summarizes responses by individual question and also by five clusters, or benchmarks, of effective educational practice. The five benchmarks are:

1. **Level of Academic Challenge**
2. **Active and Collaborative Learning**
3. **Student-Faculty Interaction**
4. **Enriching Educational Experiences**
5. **Supportive Campus Environment**

The graphs for 2005 show mean scores by theme for CSU, selected peers, doctoral extensive institutions, and all participating schools. The scores for first-year students and seniors are shown separately. For 2003, the comparison groups did not include "selected peers."

2005 NSSE Benchmark Report: First Year Students

2005 NSSE Benchmark Report: Seniors

110
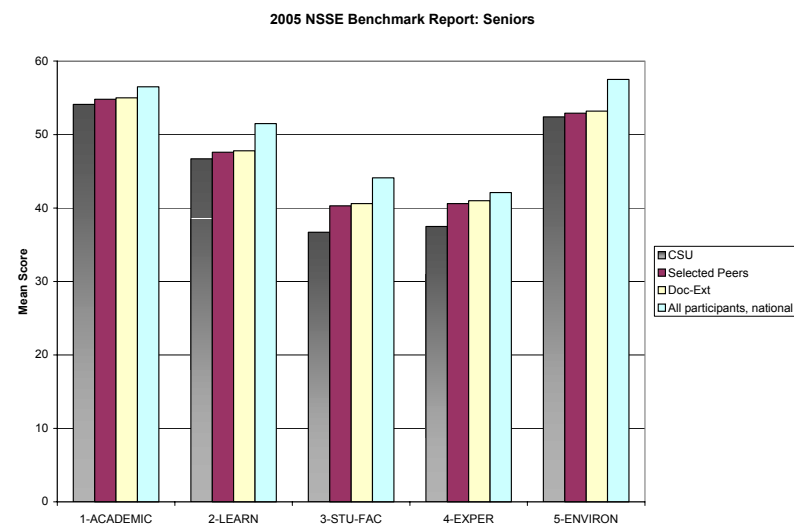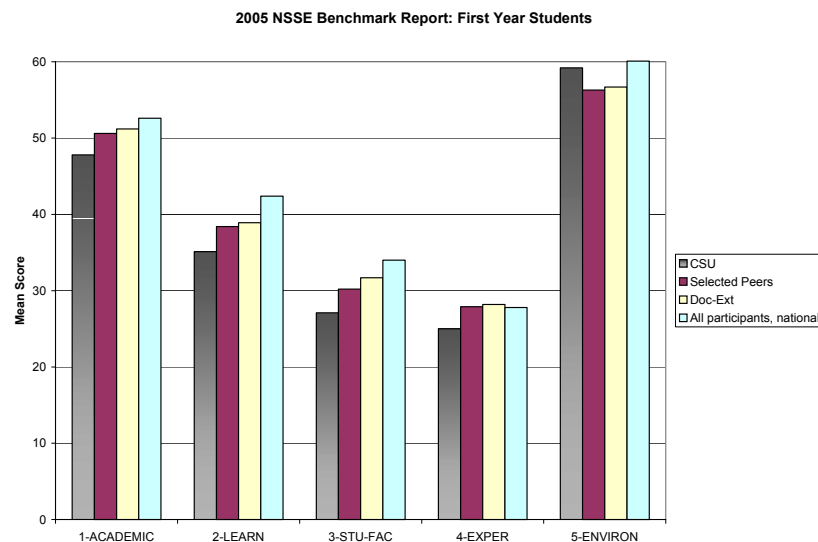
CSU mean scores are somewhat below the comparison groups in each of the benchmark areas for both the 2003 and 2005 administrations of NSSE. (Scores for 2003 are not shown.) A review of individual questions reveals only a very few questions in which CSU mean responses exceeded those of the comparison group at a level of statistical significance.

INDICATORS OF STUDENT PERCEPTION AND
SATISFACTION

The University participated in the "Your First College Year" survey
(Higher Education Research Institute, HERI) for the first time in
Spring 2005. The survey collected data from over 38,000 first-
year students at 144 campuses around the country. The YFCY
has two primary goals 1) to enable institutions to strengthen their
first-year assessment efforts, and 2) to collect national longitudinal
data on the first year of college to facilitate the study of the first-
year experience at large.

Indicators of Student Satisfaction from Your First College Year
Survey

Results from the Spring 2005 Your First College Year Survey
indicate that Freshman students, at the end of their first year,
reported high levels of satisfaction with many aspects of campus
life and with a number of services and facilities.

Your First College Year Survey, Spring 2005:
Areas of campus life in with which students were highly satisfied:

- Overall college experience
- Overall quality of instruction
- Overall sense of community among students
- Campus social activities
- Relevance of coursework to future career plans
- Opportunities for community service
- Amount of contact with faculty
- Relevance of coursework to everyday life

Services and facilities with which freshman students were highly satisfied:

- Classroom facilities
- Computer facilities
- Library facilities and services
- Academic advising
- Tutoring and other academic assistance
- Student housing facilities/services
- Student health center/services
- Recreational facilities

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The Your First College Year Survey also identified areas of concern. At the end of their first year, large proportions of freshman students reported feeling bored in class, overwhelmed by all they had to do, and coming late to class.

Comparisons were made between students' responses on the CIRP Survey of new freshman from their first week of school in the fall, and the responses of the same students at the end of the following spring on the YCFY survey. These measures indicate that the proportion of those who felt bored in class, missed school because of illness, felt overwhelmed by all they had to do, and came late to class grew between the beginning of the year and the end of the year. (It is interesting to note that the sense of being overwhelmed grew less at CSU that at other public universities. To the extent that being overwhelmed might in part represent the level of challenge, the lesser increase for CSU might not be entirely positive.)

Students' level of confidence has been shown to be associated with persistence. In three areas, students' self confidence appears to have diminished over the course of the academic year.

YFCY Longitudinal Report
Since entering this college, how often have you:

	2004 CIRP	2005 YFCY	CSU Change	Pub. Univ. Change
Felt bored in class [1]	39.1	48.3	9.2	0.9
Missed school because of illness [1]	4.0	7.3	3.3	-1.2
Felt overwhelmed by all you had to do [1]	36.4	39.1	2.7	9.6
Studied with other students	87.3	88.7	1.4	-0.2
Come late to class	60.4	58.4	2.0	4.7
Socialized with someone of another racial/ ethnic group [1]	69.5	55.0	-14.5	-11.3

[1] Percentage marking "Frequently" only. All other results in this section represent the percentage marking "Frequently" or "Occasionally".

Percent of students rating themselves "above average" or "highest 10%" compared with the average person their age in:

	Colorado State Univ			Public Universities		
	Fall 2004	Sp 2005	Chg	Fall 2004	Sp 2005	Chg
Mathematical ability	44.7	44.0	-0.7	57.1	50.5	-6.6
Drive to achieve	83.4	79.5	-3.9	77.4	72.5	-4.9
Academic Ability	82.8	72.8	-10.0	82.1	70.7	-11.4

The 2005 CSU YFCY Longitudinal results are based on the responses of 151 first-time, full-time freshman students for whom HERI could find matching 2004 CIRP Freshman Survey Data, with comparison results from the YFCY National Aggregates for institutions of similar type.

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Indicators of Satisfaction from the Fall 2005 Dashboard Satisfaction Survey

Results from the Fall 2005 Dashboard Satisfaction Survey indicate that currently enrolled Freshmen and Seniors report the highest levels of satisfaction with their a) their living environment, b) campus student services, and c) their overall college experience.

In most cases, freshmen had a higher level of satisfaction than seniors. A significant exception to this pattern is in the area of academics, where freshmen are less satisfied. Given the rate of departure in the first year, this lesser satisfaction with academics may signal lack of freshman engagement in courses.

Please indicate your Level of Satisfaction (5=Very Satisfied to 1=Very Dissatisfied)

	Freshmen	Seniors
Respondent Number	89	156
Satisfaction with your overall college experience to date	3.83	4.08
Satisfaction with your overall academic experience to date:	3.63	3.82
How satisfied are you with your current housing?	3.90	4.27
Satisfaction with campus social events	3.74	3.48
Satisfaction with involvement opportunities:		
Student Clubs and organization opportunities	4.11	4.04
Residence hall organization opportunities	3.93	3.53

Please indicate your level of satisfaction with the following campus student services:

	Freshmen	Seniors
Academic Support Services (e.g. Academic Advancement/Student Support Services, Career Center, Center for Advising and Student Achievement, Center for Educational Access and Outreach)	3.81	3.42
Housing and Dining Services (e.g. Residence Life, Residential Dining, Apartment Life, University ID Office)	3.81	3.24
Lory Student Center (e.g. Dining Services, Campus Activities, Student Leadership and Civic Engagement, University Bookstore)	4.22	3.92
Wellness Student Services (e.g. Health Center, Campus Recreation, University Counseling Center, and Wellness Zone)	4.00	3.84

Indicators of Satisfaction with Campus Residence Halls

Data from Educational Benchmarking Incorporated indicate that student satisfaction with "overall program effectiveness" of the campus residence hall system has steadily increased for the past three years.

Year	Mean Score
Fall 2003	4.60
Fall 2004	4.67
Fall 2005	4.84

Educational Benchmarking Surveys, 2003-2005
Residence Halls: Overall program effectiveness

(Scale: 1 to 7, with 7 representing "most satisfied.")

<u>Indicators of satisfaction from the Taking Stock Inventory, Fall 2005</u>

The Taking Stock Inventory is administered in the fifth week of the first freshman semester. The inventory was completed by 2,383 freshmen.

There are 48 items in the inventory. Three questions assess students' general level of satisfaction at that early point in the first year. Based on these questions, most students appear satisfied.

Taking Stock, FA 2005: Overall Satisfaction
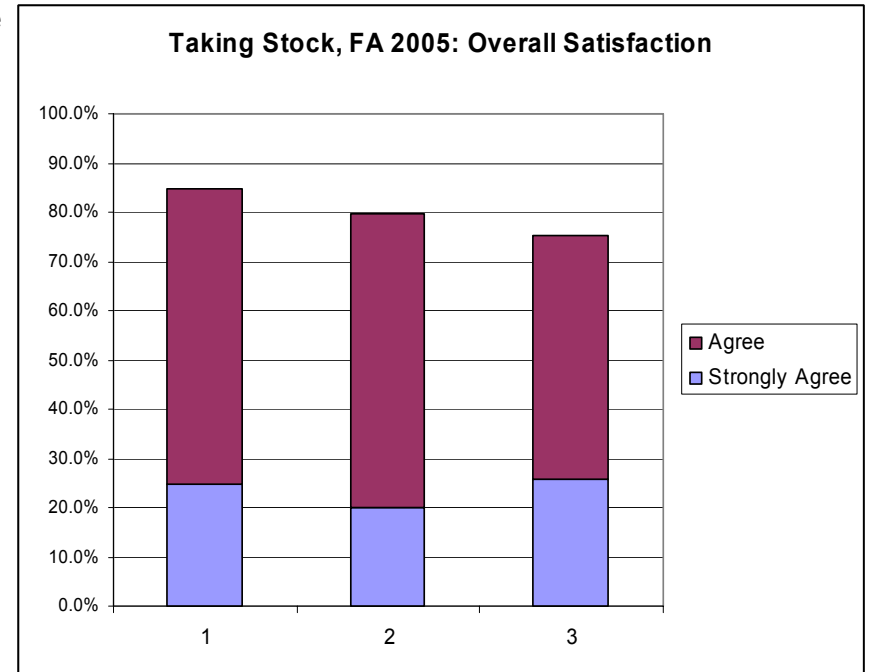
Source: CASA Study

Item #1: Overall, I am Colorado State is meeting my expectations so far.
Item #2: Overall, I am satisfied with my academic experience so far.
Item #3: Overall, I am satisfied with my social experience so far.

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Other questions in the inventory, however, reveal areas for possible attention. Some of those areas include:

- Intent to transfer (14.1%)
- Do not plan to return next fall (3.4%)
- Difficulty living away from home (21.5%)
- Personal problems that make it difficult to focus on academic work (13.8%)
- College not what the student expected (20.6%)
- Not knowing how to contact their advisor (28.9%)
- Not having been part of a study group (60.0%)
- Bored in their classes (21.5%)
- Not knowing how to find academic help (14.0%)
- Note feeling they belong on campus (7.0%)
- College expenses are causing a serious strain on the student and/or their family (26.1%)
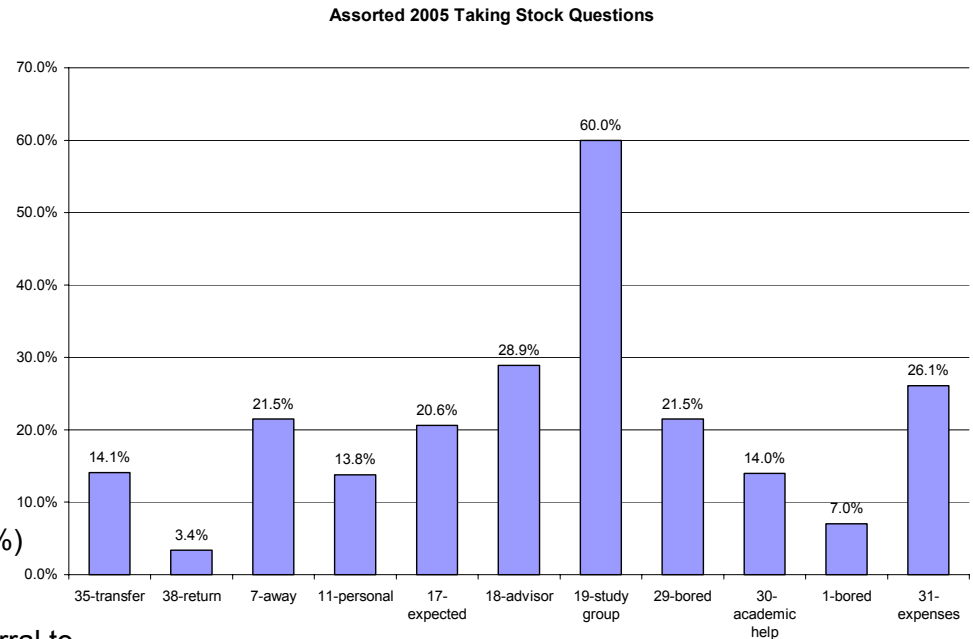
Responses of this nature provide data that prompts discussion with residence hall staff, and possible referral to campus resources or second-level intervention.

Assorted 2005 Taking Stock Questions

Source: CASA Study

Inventory Questions:
35) I will probably transfer to another school before finishing my degree
38) I plan to return to CSU next fall
7) Being away from home is difficult
11) Personal issues are making it difficult to focus on academics
17) My college experience is not what I expected
18) I know how to contact my academic advisor
19) I am involved in a study group for one or more of my classes
29) I am bored with my classes
30) I know how to find academic help on the campus
1) I feel like I belong on campus
31) College expenses are causing a serious strain on me and/or my family

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Intent to Transfer. In the Taking Stock study, 341 students who took the inventory in the sixth week of the semester indicated that they intended to transfer. A follow up of those students found that while some had left the institution, many had persisted. Perhaps the campus was successful in engaging these students despite their initial intentions.

A review of students indicating intent to transfer from the Fall 04 Taking Stock Inventory are persisting in a similar pattern.

Source: CASA Study

Intent to Transfer and Retention (Taking Stock 03)

Legend: Return rate for Intent to Transfer — Return rate for entire cohort
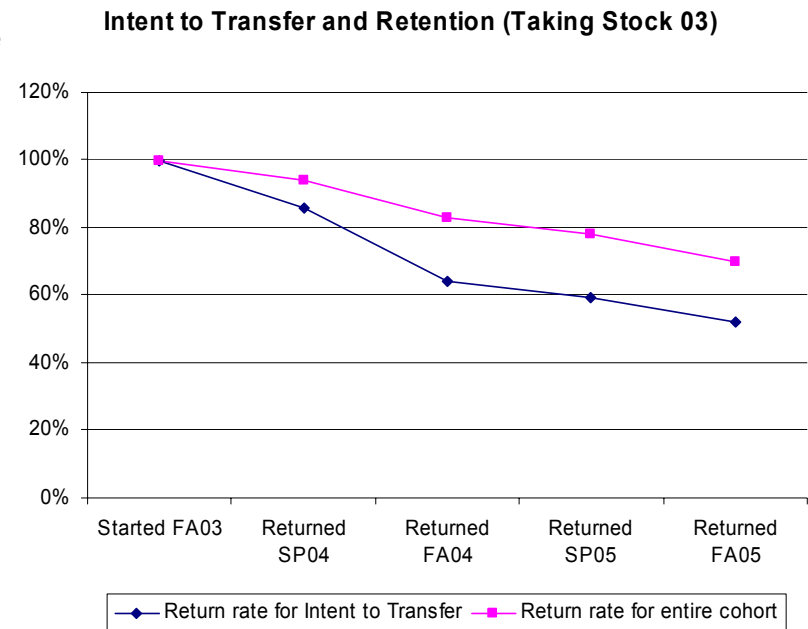
OTHER CHARACTERISTICS OF STUDENTS WHO LEAVE

Destinations of Students Who Leave

On request, OBIA secured data from the National Student Clearinghouse of the U.S. Department of Education for students who entered the University in fall of 2002, and subsequently left the University by fall 2003 or fall 2004. An analysis of that data shows the following:

- 1,153 students left the University over the two years after entering in fall 2002. Of those who left, 750, or 65%, were found in the National Clearinghouse data. Thus, at least 65% of those who left transferred to another college. Of those who transferred to another college:

    o 72% of nonresidents transferred to a college in their home state. 87% of residents transferred to another college in Colorado.

    o 45% did not transfer to a four-year school (meaning, presumably, that they transferred to a two-year school).

    o 94% transferred to public colleges.

Source: Derived from
OBIA data

Further analysis is shown on the following page.

Destinations of Students Who Leave, continued

Students who entered in Fall
02:

Where they were in Fall 03

Total: 69% went to another school
83% of those went to a school in their home state
94% of those transferring went to a public institution

Residents:
68% transferred
86% of those stayed in Colorado
14% enrolled in another state
94% of those enrolled attended public institutions

Nonresidents:
70% transferred
75% of those went back to their home state
12% stayed enrolled in another Colorado school
13% enrolled in another state besides their home or Colorado
94% of those enrolled attended public institutions

Where they were in Fall 04

Total: 59% went to another school
69% of those went to a school in their home state
94% of those transferring went to a public institution

Residents:
59% transferred
87% of those stayed in Colorado
13% enrolled in another state
95% of those enrolled attended public institutions

Nonresidents:
60% transferred
75% of those went back to their home state
16% stayed enrolled in another Colorado school
20% enrolled in another state besides their home or Colorado
90% of those enrolled attended public institutions

Departure and Late Admission

The Office of Admissions conducted an analysis of students who were admitted from the class entering fall 2004. ("Late" was understood as after June 1.) The first-year retention rate of the 90 students who were admitted late and subsequently enrolled was 60.5% (compared to 82% for the overall 2004 fall cohort). A further analysis was conducted to determine whether there were factors in the composition of the late admit group that explained the low retention rate. The further analysis failed to find such factors.

The attrition from this group may be a one-time phenomenon. If not, this may be an area for either additional student intervention, policy change, or both. Late admits from the class of fall 2005 will be tracked to see if the low retention rate of such students constitutes a trend or a one-year anomaly.

Source: Admissions Study

Departure with High Credit Levels

Looking at the 1998 cohort of entering freshmen after five-and-a-half years shows that 102 students left the University with 90 or more credits and greater than a 2.0 grade point average. Of these, 65 left with 110 or more credits.

These students have made a substantial investment in their college career and yet may not see the full benefit of this investment in the absence of degree completion. Intervention with students who have a sufficient grade point average and high credit completion level should result in increased chance of graduation for these students.

Students Who Depart with > 90 Credits and >2.0 GPA

	90-99	100-109	110-119	120+		Total
Resident	13	12	11	35		71
Nonresident	5	4	2	14		25
WUE	1	2	0	3		6

122
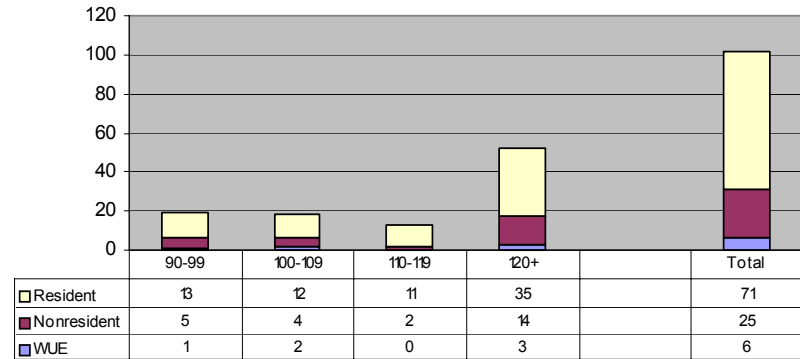
APPENDIX 2:

OBSERVATIONS CONCERNING INDIANA UNIVERSITY AT
BLOOMINGTON

In addition to the two universities (University of Washington,
Seattle, and University of Maryland, College Park) visited by a team
of the Retention Working Group, a third university was of interest.
Indiana University at Bloomington is among the institutions included in the
data review (see table on page Table 85) demonstrating a high differential
between predicted and actual graduation rates (a difference of +12
percentage points).. In addition, many characteristics of the University of
Indiana were not dissimilar from Colorado State: its student quality
(ACT/SAT median test scores) are very similar and its per student FTE
general fund expenditures, while higher, are within $2,000 of the CSU
level.

The Working Group was not able to visit the University of Indiana at
Bloomington. Nevertheless, research on the Indiana University Website
produced a number of notable observations:

- Freshman retention rates during the period 1999-2004 have been
  steady at 87%-88%, but the six year graduation rates increased
  from 65.3% for the entering cohort of 1994 to 71% for the 1999
  cohort.

- All new freshman students enter the University Division, without a
  declared major. Students must declare a major no later than the
  semester in which they complete 55 credit hours (usually the 5th
  semester). Most certify into majors after two to three semesters.

- The University articulates expectations of students. Beginning with new student orientation, expectations and commitments are outlined as follows:

> *Indiana University is a community built on the foundations of academic excellence, personal development, and social responsibility. The expectations of the community include:*
>
>   o *Engaging in rigorous intellectual inquiry and artistic creativity,*
>   o *Recognizing each individual's accountability for his or her own behavior, and*
>   o *Appreciating the contributions made by all community members.*
>
> *The Indiana Promise expresses the student's commitment to these values and acknowledges the importance of the student's active participation in the IU experience. This promise is made by students both to Indiana University and to themselves.*
>
> *THE INDIANA PROMISE*
>
> *I promise that:*
>   o *I will be ethical in my academic work.*
>   o *I will take personal responsibility for what I say and what I do.*
>   o *I will respect the dignity of others, treating them with civility and understanding.*

- The University engages students (about 4,000 per year, mostly freshmen) through an array of learning community strategies. These include:

  o An Intensive Freshman Seminar (IFS) program, a kind of bridge program for any interested students, takes place in the three weeks prior to fall semester.
  o The Right Start program serves students who are first generation, resided far from a college, attended a high school that did not have many college preparatory opportunities, or others who wish to become familiar with university expectations, resources, and needed skills. The program consists of credit courses the build a sense of community and collegiality while integrating students into the university environment.

- A set of six living learning centers, including centers that focus on African American History and Culture, Liberal Arts, Fitness and Wellness, and an IFS extended studies community for those who began with the pre-fall IFS program. Each living learning center has a specific set of academic course requirements related to its theme.
- FIGs, or Freshman Interest Groups, composed of two or three thematically-linked courses accompanied by a one-credit seminar taught by peer instructors. (30 FIGs are offered for fall 2006, perhaps serving 500 students.)

Several of the learning communities emphasize interactive, experiential, and service learning, interdisciplinary seminars, and student involvement in designing courses.

- Great attention is paid to students on probation. Probation policies adjust for the number of credits students have completed:

Credit Level	Placed on Critical Probation if GPA falls below:	Placed on Probation if GPA falls below 2.00 but is above:
1-18	1.33	1.33
19-36	1.63	1.63
37-45	1.83	1.83
>45	2.00	

The first time a student falls below the critical probation benchmark, they are placed on "critical probation." The next time they fall below the benchmark, they are dismissed. Dismissed students may not enroll for one semester, then must petition to re-enroll. Project Phoenix works with all students on probation. Probation students have opportunities to develop an academic contract for improvement, and to take a three-credit class that helps them devise and implement a specific plan for meeting the contract.

- A variety of academic support services are available to all students, including the Student Academic Center, Individualized Academic Assessment and Assistance, and the Academic Support Center.

In the absence of an on-campus visit, it was not possible to assess the level of coordination among retention-related campus efforts.

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