

Undergraduate Retention Initiatives

Office of the Provost

Texas Tech University

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Executive Summary

Texas Tech University is committed to being a great public university achieving excellence in research and student success. Few measures represent student academic success better than the indices of retention, persistence and graduation. Furthermore, Priority #1, “Increase Enrollment and Promote Student Success”, of the institution’s 2020 Strategic Plan—*Making It Possible*, places the highest importance on achieving these goals through improved student retention and graduation rates.

As one of President N. Duane Nellis’ highest priorities during his first year, Texas Tech will develop effective programs that significantly improve student academic success. Texas Tech University is no stranger to examining and refining its approaches to improve the educational outcomes of its students. Numerous university committee reports have been provided to inform this study of existing and prospective retention initiatives for the University. These include the findings of external groups that have studied the retention, persistence and success framework at Texas Tech, as well as internal groups such as the Committee on Academic Advising and Retention. Utilizing the collective insights and observations of both external and internal student success professionals, the following study offers a snapshot of retention strategies that have been examined at the University with full, limited, or no implementation, a brief analysis of the immediate barriers to implementation of retention strategies, and followed by a set of long-term recommendations that are disaggregated by relevant subtopics.

A governing assumption of this report is that the organizational structure, pedagogical expertise and programmatic agility exists at Texas Tech to emulate the first year retention and sixth year graduation rate of peer institutions; 90% and 70% respectively (IPEDS 2011-2012).

The study concludes with additional recommendations organized by programmatic themes including specifically academic advising, college specific retention plans and by stages of student enrollment.

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Introduction

On February 2-4, 2010, Dr. Brenda Williams and Dr. David Trites, Senior Associate Consultants at Noel-Levitz®, visited Texas Tech University (TTU) for the purpose of conducting an external analysis of the college's advising and retention-related strategies and tactics. This document is a compilation of excerpts from the Retention/Advising Opportunities Analysis provided by Noel-Levitz (see Appendix E), the 2010 Strategic Enrollment Planning Committee on Retention (See Appendix D), recommendations from the Committee on Academic Advising and Retention (see Appendix B and CAAR Strategic Plan), and reports provided by the academic colleges and the Division of Undergraduate Education and Student Affairs, Office of the Provost.

Successful retention programs encompass virtually everything an institution does to improve the quality of student life and learning. Quality can be defined as that set of attributes of an educational program or service that consistently exceeds student expectations within specifically defined institutional-determined standards and/or criteria of performance. Practically speaking, the evidence of effective programs is clear, namely that the route to successful retention lies in those programs that ensure from the very onset of student contact with the institution; that entering students are integrated with teaching/learning processes of the college; and that students acquire the skills and knowledge needed to become successful learners in that community.

This paper describes current and prospective Texas Tech University retention strategies including strategies at the college levels and academic support levels.

General Observations

- The ultimate goal of a retention effort is improved educational experiences and outcomes for students, rather than retention *per se*.
- Stop outs are expensive, and improvements in retention rates can positively impact the annual operating budget, students' financial futures, and the overall long-term economic position of the state.
- Some attrition is inevitable and acceptable, and improving retention is a complex task.
- Some attrition is predictable and preventable by focusing efforts and resources on selected strategic opportunities.
- Attrition is a problem for which there is a solution; retention is one aspect of an enrollment management program over which an institution can exert considerable influence and control.
- Retention and attrition are multivariate phenomena and are not subject to quick-fix strategies.
- Persistence depends, to a large degree, upon the extent to which an individual has been integrated into the academic and non-academic components of the campus environment.
- Academic advising may be the most underestimated of all retention strategies.
- The advancement of knowledge and student success is best supported by strategically selected retention efforts that are thoroughly informed, highly responsive, and well-coordinated.
- Retention is a campus-wide responsibility, and institutional change results only from a coordinated and collaborative effort.

Statement of the Challenge

The TTU Strategic Plan identifies targets for the following criteria that are related to Undergraduate retention: fall total enrollment, one-year retention rate, two-year retention rate, four-year graduation rate, six-year graduation rate, four-year graduation rate for transfer students from Texas w/ at least 30 credit hours, progress toward Hispanic Serving Institution Status (25% FTE Hispanic), and progress Toward State of Texas Diversity (African American, Multi-racial, Hispanic, Asian).

In FY2013, Texas Tech's federal (IPEDS) report indicated that the university had graduated 62.1% of its recruited student body over the prior six-year time frame (4 year = 37.0%). Though this is above the state's overall FY2012 (the most recent) rate of success (6 year = 51.1%, 4-year = 27.6%), these metrics indicate suggest among other things a potential disconnect between the opportunity and the outcome.

Overview of the Literature

The literature may be best summarized by Seidman, who holds that student retention and persistence are: 1) multivariate, 2) everyone's job, and 3) not going to happen efficiently and effectively without deliberate and dedicated leadership. Seidman's work summarizes many others in an actionable formula:

$$\text{RET} = \text{E}_{\text{ID}} + (\text{E} + \text{IN} + \text{C})_{\text{IV}}$$

RETention = Early Identification + (Early + Intensive + Continuous) InterVention

Early identification and appropriate levels of timely intervention will involve a thorough awareness and understanding of students' entry characteristics, goals, challenges, and performance, along with the institutional foresight and commitment to provide substantive and beneficial resources and experiences that encourage student success and persistence.

From Astin's initial work to Tinto's (original and revised) theory of student-institution interactions, we see that, for the university's part, retention is most likely to increase when Texas Tech can identify potential issues early, and when it can intervene in ways that are early, engaging, and ongoing. A brief listing of relevant literature is provided at the end of this document.

Long Term Recommendations

Retention Planning Recommendations

- Use a highly data-informed planning process to develop a clearly articulated and comprehensive **annual retention plan**. The outcome must not be a static plan. Instead, this process should create an ongoing and continually evolving process of planning, evaluation, and improvement that is 1) highly responsive to changing conditions, 2) fully aligned and integrated, and 3) immediately and progressively actionable and accountable at each institutional level: university, college, department, and individual.

- Inform the retention goal-setting process with **retention trend data** for as many subpopulations (e.g., undecided students, late-admit students, First Generation Student, and other student groups consider to be in academic jeopardy) as possible. Once the retention planning processes at TTU have produced agreements on which subpopulations to target for improvement, regular monitoring, reporting, and responsive intervention should take place.
- Create a retention dashboard once goals, benchmarks are created.

Data Analysis and Reporting Recommendations

- Analyze recruitment and subsequent **performance data** to provide a better understanding of the differing challenges and obstacles faced by first-time in college (FTIC) students and transfer students.
- Increase the access to and distribution of **existing retention data** and information. Specific opportunities to provide additional actionable data include disaggregation of subpopulations, analysis of major-changing activity, etc., in order to lend support to the retention improvement process.
- Implement **Platinum Analytics** software to provide data-driven decision support for course offerings, alignment of academic room allocations with predicted enrollment needs, scheduling decisions, etc. (Target: Fall 2014)
- Implement **DegreeWorks** to provide students and advisors a real-time and easily accessible view of actual progress and next curricular steps toward degree completion. (Target: Fall 2014)

Analytics

Recommendations

Utilize advanced analytics to inform strategic planning for retention initiatives by creating a data-driven, informed strategic approach to improving student retention. To accomplish this, it is recommended that the university develop an advisory group to:

- Define at-risk target groups and specialized program groups for analysis; i.e., first generation college students, transfer students, IS1100 students, etc.
- For each identified group, conduct advanced analyses:
 - to determine if group membership predicts retention,
 - compare group retention rate to the institutional retention rate, and
 - interpret data for significant differences and patterns
- Further investigate, research, brainstorm, advise on issues, and propose solutions supporting student retention; e.g.,
 - testing retention predictors
 - evaluating current programming
 - adding relevant programming
 - changing/fine-tuning existing programs and efforts

Faculty Teaching and Learning Recommendations

- Increase **professional development for faculty** who teach freshmen and sophomores, focusing on increasing innovation and student engagement with the learning process.
- Incorporate **active learning programming** into students' degree plans (Target: Spring 2014). Active learning approaches such as undergraduate research, service learning, study abroad, and internships are transformational experiences for undergraduate students. As students put their classroom knowledge into practice, these experiences show gains in both content and contextual knowledge, creativity and critical thinking, problem-solving skills, technical and communication skills, and understanding of the intersections of disciplines. Students who participate in active learning also show higher retention rates, improved course grades, greater persistence in their major, higher graduation rates, and higher rates of acceptance into and enrollment in graduate and professional schools.

Tailored Retention Programming Recommendations

- Expand **engaged advising programs** that include with social events, academic guidance, community service, mentoring for the groups of students who are most academically vulnerable, e.g., First Generation College (FGC) students. PEGASUS, the Texas Tech Program for FGC student success, boasts a persistence rate of 96% (N = 305) rate of its 318 program participants from Fall 2012 to Spring 2013. This, when compared to the 2012 institutional one semester retention rate of 94.1% (N = 4,231) may indicate that the integration of many complementary intervention, advice, interaction, and policy initiatives, is beneficial in supporting the success of this student group, and potentially others as well. Expand the freshmen year seminar program (IS 1100 Raider Ready) by requiring it for certain additional subpopulations of freshmen considered to be at risk. These populations can be determined by disaggregating subpopulations to identify retention performance gaps. Approximately 27 percent 2013 class of freshmen (1,335) elected to take Raider Ready. This proven strategy has a history of positive impact on TTU retention rates. The one semester retention rate for the 2012 cohort was 95.3% compared 94.1% for student who did not enroll in Raider Ready last fall.
- Extend the Raider Ready Program with a curricular offering designed to **support sophomore success**. Texas Tech University offers numerous high impact, retention-focused practices for first year students, including learning communities, FIGS, and freshman seminar. Following the first year, students often move off campus, experience new demands and challenges without the same support mechanisms utilized previously. Persistence and retention rates for sophomores are an area of concern for the University. Students entering their third semester at TTU and 30+ semester credit hours could be positively impacted by a specialized high-impact practice to further their connection and engagement at TTU and assist with their exploration and confirmation of major selection. Initiatives that will allow TTU to decrease the typical 10 percent sophomore attrition may be as simple as the addition of a sophomore reorientation program, or designing a seminar similar to IS 1100 for sophomores/juniors.

- Raider Ready offerings should culminate with a Senior IS Seminar that focuses on “**college to career**” transitions. Other tailored programming should also be developed and integrated into the advising and engagement experience of different student sub-populations.
- Expand Raider Ready IS 3100 the one hour **transfer-student seminar** course designed for transfer students to successfully manage the transition to Texas Tech from their transferring institution.
- Develop **strategic interventions** from new reports that identify students in selected student groups, e.g., excessive major changing, nearing drop limits, dropping/repeating multiple courses, incomplete paperwork, over 120 earned hours, GPA below 2.25, etc. (Targets: Reports- Fall 2014, Interventions- Beginning Spring 2015).

Because the student and educational situation is always changing, effective intervention strategies will be dynamic, highly responsive, and though strategic in nature, they may be deliberately short-lived. Improved data collection and reporting will provide a new retention office with adequate data to identify immediate-return opportunities. Funding, resources, influence, and authority to invest in agile retention programs will all be essential elements of a successful institutional strategy.

Academic Advising and Support Recommendations

The Campus-wide Committee on Academic Advising and Retention (CAAR).

CAAR provides a more coordinated approach to healthy and academic advising practices by reviewing, consolidating, and using research approaches to more accurately assess academic advising initiatives and personnel. (Target: May 2014 Graduation). This committee was formed to facilitate the following: communication, dissemination of best practices, staffing and funding, professional development and training, assessment of student learning via advising, and integration of the advising services available to TTU students.

- Provide continued **executive sponsorship**, endorsement, and support of CAAR initiatives in ways that will strengthen its positive impact in the university community. The Committee’s complete strategic plan contains recommendations supporting much of the content in this document. The strategic plan is located online at <http://www.depts.ttu.edu/provost/acadaffairs/advising.php>.
- Increase presidential expectations for college-level **accountability/recognition** for results of CAAR’s collaboratively developed programs and initiatives.

Advising Models

- Develop and adopt a few broad baseline **student learning outcomes and assessable measures** that can be used to summarize advising performance across the institution.
- Using nationally-recognized standards of excellence, redesign the university’s academic **advising program** to ensure highly-structured, learning-centered experiences that offer “front-end loading and progressive responsibility” to students in all majors as they matriculate.
- Provide for and encourage consistency between the **advising structures and staffing** of the various academic colleges.

- Consolidate or coordinate the **academic advising leadership** of offices providing academic advising services. Review of the current model(s) should be undertaken with an effort to design a learning-centered advising approach that will ensure consistent academic counsel from advisors who view their profession as much more than class scheduling. A more dynamic understanding of academic advising and retention should focus on student growth and development in addition to course scheduling, compliance advising, academic planning, and the like.

Advising Training & Professional Development

- Promote advising as a valued profession and provide enhanced advisor training and professional development that supports the ongoing improvement of advising programs and personnel. Institutional **training and professional development** of academic advisors will be an integral part of the student retention strategy.
- Create **initial training** for academic advising personnel and **follow-up** with an annual advising resource fair.
- Develop and align a professional development program with the human resources **career progression ladder** for academic advising professionals.
- Establish funding to **sponsor academic advisors' membership in NACADA**: The Global Community for Academic Advising and travel stipends to support their attendance at its annual conference.
- Create an **online forum** for collaboration and conversation around advising policies, procedures, and tools. (Completed: Fall 2013)
- Assign an **office responsible for professional development of advising** on campus. (This office would work collaboratively with the associate deans and advisors in each college. Colleges and associate deans would maintain autonomous supervision over college advisors. The office would be responsible for organizing, coordinating, and integrating services associated with advising (formal and informal). This is **not** a recommendation to centralize advising, since TTU consists of complex and unique colleges with diverse academic accreditations and policies.

Early Alert

- **Mandatory mid-term grading** for all students or for all students through the end of their sophomore fourth semester; this must be backed by policy, supported by results.
- Implement both pre-enrollment and post-enrollment **institutional early-alert systems**. Designed to identify students with at-risk attributes and behaviors while they are still receptive to intervention; one such example is the implementation, expansion, integration, or strategic replacement of early alert software such as MAP-Works, paper-based systems like absence reporting and insulated and other redundant systems, e.g., grade reporting in Athletics or SDS. To do this, the university should conduct a thorough requirements analysis and workflow mapping exercise to determine appropriate fit and benefit of potential early alert systems, e.g., GradesFirst, MAP-Works, Ellucian's Course Signals. Pre-enrollment early alert provides for the identification of dropout-prone students who could benefit from institutional intervention while post-enrollment approaches help identify students who are already experiencing academic, social, and/or personal problems that might be ameliorated by institutional intervention. Pre-

enrollment early-alert programs compare student attributes with models of successful students nationally.

- Develop **COGNOS reports** to identify at-risk students as characterized here: Currently enrolled students who are unenrolled for the following semester, students with “excessive” major changes, students nearing drop limit, students dropping multiple courses, students repeating multiple courses, accumulation of dual-credit, Midterm grading for all students, Students with less than 30 hours to graduation without filed intent to graduate, Students with more than 120 hours, and Students with GPAs less than 2.25. Each of these should be matched with an appropriate university-level or college-level **intervention** that is timely and accountable for results.
- Identify and analyze **students who do not return** each semester

Advisor Tools & Technologies

Technology tools, ideally, should provide a seamless and integrated, user-friendly experience for the bulk of advising interactions with features that include online appointment scheduling, real-time integration with student information system, documentation of advising appointments conducted in a variety of formats, capture of assessable measures, reporting at various levels of the administrative hierarchy, effortless transfer/sharing of advising records, quality assurance/auditing, dashboarding of business intelligence, and integration with personnel evaluation and strategic planning/assessment of the institution’s advising offices, personnel, and programs.

- Evaluate and continuously **improve DegreeWorks** technologies to make these more user-friendly, more accurate, and better connected with other online student resources, including standard advice, text from the University Catalog, advising web sites, long-term plans, active learning opportunities, tools that facilitate schedule-building and grade calculation.
- Consistently utilize pre-requisites, course and student attributes, reserved seating, wait-listing, etc., to **minimize** the need for individual course enrollment **overrides**, progressive seat release, etc.
- Pursue and procure an **advising-centered technology platform** that facilitates the efficient and effective interaction of academic advisors and their students (Currently using TimeTrade, however other such as GradesFirst can schedule appointments as well as serves early alert needs together).
- Utilize mandatory Math Placement Examinations and other available **measures of student readiness** to support more effective course selection advice.

Learning Support

Current Initiatives

- The University provides tutoring to all students. These services are delivered through The Learning Center which provides subject specific tutoring, walk-in tutoring, general academic success skills tutoring and supplemental instruction (SI) peer-tutoring. Students may also receive general walk-in tutoring through the Residential Tutoring program. Lastly, students with documented learning challenges registered by Student Disability Services may apply to receive fee-based tutoring and

academic counseling provided by the TECHniques Center. Student athletes receive tutoring services from each of these offices as well as from the Marsha Sharp Center

Recommendations

- Create direct intervention programming for students earning grades of D, F, or who Withdraw/Drop from the course (DFW); provide support for additional Supplemental Instruction leaders. The selection of which shall be done in consultation with colleges and departments.
- Expand Supplemental Instruction the free, weekly peer-led review sessions for students in historically difficult courses. SI Leaders will take information from class lectures and the textbook to efficiently review concepts from the course through various strategies: (1) A peer tutoring program: students teaching other students (2) Program has targeted the 14 core courses with the highest DFW rates (3) Students who have successfully completed the course are trained to help current students who are having difficulty (4) Program appeals to students, such as first generation and low-income students, who are reluctant to approach a professor with questions
- Expand The Leadership Development Center located in the Carpenter/Wells Complex and serves as a central hub for student leadership in the residence halls. Offices for the Residence Halls Association, National Residence Hall Honorary and USH Student Staff Council are all located in the Leadership Development Center, as well as a wide variety of meeting and study rooms.

Financial Support

The journal of the National Association of Financial Aid Administrators published an article in 2007 entitled “Institutional Aid and Student Persistence-An analysis of the Effects of Institutional Financial Aid at Public Four-Year Institutions.” The article indicates that financial aid is not really a particular *motivator* to attend college or persist, but rather an *enabler* that allows students to attend and persist.

Current Initiatives

According to an October 2012 Noel-Levitz report entitled, “Strategic Use of Financial Aid,” retention of the Texas Tech *no need/merit population* exceeds the *need and full pay population*. This concurs with historical data that show Texas Tech’s merit students generally come from a more affluent or college ready family. Financial Aid’s number one priority, increasing Presidential Scholarship awards at a pace equivalent to tuition increases, has been partially implemented using institutional funds. The absence of endowment support and limited designated institutional funds restricts the university’s capacity to completely deliver on this recommendation. The same circumstance has limited our ability to implement another recommended strategy: increasing need based spending for equity packaging.

Texas Tech is currently participating in a pilot project with the THECB, along with other institutions known as “Grant Aid and Student Participation.” As part of this project, data files with information on students and their financial aid awards have been shared with to the THECB for analysis, but a final analysis delivery date has not yet been released.

Recommendations

Texas Tech's financial aid personnel have come to believe there are many opportunities in which aid programs and policies could support the increased retention of students. These factors include the following:

- earlier application for financial aid and scholarships, now even more crucial with state grant and top 10% application deadlines
- earlier communication of scholarship offers by colleges
- increased funding to support higher value scholarships
- consideration of a monthly payment plan that begins early, prior to the beginning of school, to allow parents to budget for an entire year, thus assisting in their efforts to bear and balance various financial burdens

Specific College-Level Retention Strategies

College of Agricultural Sciences and Natural Resources

Current Structure/Approach

The college generally provides retention services and activities through its Bill Bennett Student Success Center. Students receive a booklet of programs and projects from the center. Specific retention programs include:

- Ag Pals: a mentoring program for current students and entering freshmen
- Ag Fest: an event held at the first week of the fall semester to welcome new and current students
- Residential Learning Communities
- Red Raider Orientation
- undecided academic advisement
- early alert program
- e-newsletter
- tutoring
- Popcorn Pop-Ins: an event of the success center to draw students in
- engagement survey: survey designed to measure factors that influence student success

Initiatives

- adding a spring retention event "CASNR Raider Welcome"
- identifying early at-risk students, such as those are on probation, and require mandatory advising meetings
- developing a "Corrective Action Contract" that complements the engagement survey

Support Needed

- Support for the ongoing reclassification and restructuring of staff duties in the Bill Bennett Student Success Center to enhance retention efforts. Staff reorganization or additional staff will be

needed to establish a lower staff member to student ratio and facilitate more effective meetings with at-risk students.

- Funding may be needed to renovate facilities in the Student Success Center and accommodate modest increases in staffing.

College of Architecture

Current Structure/Approach

- The college has already begun to work on the specific issue of retention. The leadership of the college is aware that within its field, retention is critical. The college recognizes that enrollments in their units are dropping, partially related to the consequence of national market opportunities. Careers in architecture have plateaued and in some parts of the country declined.
- The college recognizes the very high demanding curriculum imposed on its students.
- The college currently enjoys a 70% graduation rate within 3.5 years. Additionally, the college requires students to study abroad every summer. Retention and persistence is related to a highly demanding curriculum and “soft market.”

Initiatives

- Current initiatives within the college include dedicated staff, such as Patty Perkins.
- The use of advising fees have been very important in the college and used to support the following retention activities: training of academic advisors, support for academic advisor retention, marketing campaign to specifically encourage undergraduates in the major to persist to complete graduate degrees within the college, and student initiated dialogs
- “Burger Burns” social programs and events that bring faculty, staff, and students together to build a college culture of reciprocal support.

Support Needed

- Additional professional development training for its academic advisor
- Availability of predictive analytics to assist in their centralized, and eventually department specific, retention activities.

College of Arts & Sciences

Current Structure/Approach

Advising/retention are both *centralized and decentralized* within the College. Academic advising takes place in the departments, while progress towards degree is monitored by the Dean’s Office. Retention efforts are discussed and implemented at all levels – among Associate Deans, Chairs, and Advisors.

- Retention begins with good recruiting & outreach. To this end, the college has increased efforts to reach out to and recruit in the local schools (for example: LISD, Cooper, Frenship).
- One specific initiative was undertaken to augment the advising in Physics – this was done strategically to assist in preserving the department and also to support students. This effort has

had great success, with over 20 new Physics majors recruited in 2013. Similar outreach efforts are taking place in POLS/Global Studies, English, and HESS.

- Several academic departments offer tutoring for high challenge courses: Chemistry, Math, English, and Foreign Language Courses.
- Students who have a 2.00-2.25 GPA are enrolled in TTU PADR classes (*Programs for Academic Development and Retention*).

Initiatives

The college has already begun to examine the issue of retention and persistence. The college will begin to develop a blueprint by which it can support the retention efforts taking place within the academic departments.

- The college would like to implement intervention specialist in all 16 of its academic units (this is contingent upon funding).

The Deans and Chairs will review the process of reducing underperformance in courses with high DFW rates.

- *Increased faculty involvement* in student intervention and student support efforts will be crucial to their success.
- Additional departments may be able to offer tutoring for high challenge courses.

Support Needed

- Accurate data & reports need to be available to all Colleges.
- Encourage increased faculty involvement.
- Funding for Intervention specialists in A&S departments.

Rawls College of Business

Current Structure/Approach

- The college offers a number of student support programs through its undergraduate service center. These include advising first year engagement recommendations
- Academic advisors will work with students to develop and implement an individual student success actions plan.
- Help students have a comprehensive understanding of course requirements, GPA requirements, degree requirements, and prerequisites within each major.
- Engage in evaluation of a student's progress and make referrals as needed. Engage in active listening and ask open-ended questions to assess individual student needs, goals, and abilities. Reinforce self-direction and self-sufficiency
- The staff of the undergraduate service center will attend national trainings and conferences such as NACADA.

Initiatives

- Future retention initiatives that will be piloted in the college include: Rawls Business Leader program; Peer mentoring and mentor program for freshman.
- The college hopes to affect 25% of the freshman class through these new initiatives.
- The college will develop its own residential learning community – RCOBA is the only such unit without an existing learning community.
- Although the trends within the college suggest that it does not lose students due to academics distress, it will further develop new: Communication center, tutoring services, writing services
- Related to course availability and enrollments, the college will reduce the number of students in high challenge courses such as introduction to finance.
- The college will sign high challenge courses to full professors or other highly effective tenure track faculty, as well as reducing the number of students and increasing the number of sections for said courses.
- The college will make a concerted effort to engage students in their second and third year.
- Goal of increasing the retention rate of freshman from 77% to 82% in the college.
- Goal of increasing the retention, persistence and graduation rate of the college by 5% overall

Support Needed

- Additional focus on retention and engagement of students throughout the baccalaureate pipeline.
- Additional training and professional development opportunities for academic advisors.
- Mechanisms for improving the transfer of students within and across colleges to ensure their best fit major and persistence/graduation from the university.

College of Education

Current Structure/Approach

As a professional unit, the college primarily serves graduate students. In order to effectively address the retention in this college, the current approach includes a special focus on its graduate students. Its structure and approach are seen in the following items:

- The college recently implemented a graduate student survey which offered several findings:
 - academic advising is generally regarded as poor
 - research courses were generally regarded as poor
 - students feel poorly prepared upon graduation
- The college formed, what the Dean referred to as a “super committee” this committee examined specifically:
 - advising issues, preparation and professional development
 - new services and workshops for graduate student development
 - identification of additional web-based resources
- The college continues to reach out to school districts\employers and ask these stakeholders plainly, “What do employers want from their teachers?”

- Additional graduate student service coordinator positions were created.

Initiatives

With the focus at the time being on graduate students, the college intends to undertake the following:

- enhanced consideration and sequencing of courses to ensure efficient matriculation to graduation
- P1 – P2 – P3 approached teacher training and development
- realignment of teacher training and internship placement
- re-examine the technical and “soft” advising responsibilities of faculty members

The current freshman class has doubled in the college. Thus, at the undergraduate level the college is examining:

- increased site coordinators to reduce ratio to 20 – 30
- exploration of learning communities
- enhanced in the residence halls engagement with freshman in their first and second years
- reintroduction of a “teacher’s ambassadors” program....

Support Needed

- assistance with additional staff, specifically site coordinators for undergraduate majors
- additional support staff to improve close monitoring of students
- identification of effective third and fourth year engagement programs
- additional resources to move content online
- additional resources for marketing

College of Engineering

Current Structure/Approach

- The college graduates approximately 40% after six years. This rate of graduation is very low for an engineering college that aspires to the kind of distinction TTU hopes for.
- Programs within the college are generally too long, and are losing too many students in the process.
- Strategies to prevent academic attrition long-term:
 - Increasing the selectivity of students admitted to the college
 - implementing strategies to encourage persistence
 - continue to enroll students through the pre-engineering program and identify academic weaknesses early
 - focus on increasing graduate students
 - identifying students in the early
 - an unofficial survey was conducted in the college, revealing that students do not leave because of financial distress-survey revealed that students indicated their reasons for leaving the college having to do with high challenge course work.

Initiatives

- Obligating graduate students with generous support packages to offer approximately 10 hours annually as tutors. Tutoring is critical to the long-term retention strategy of the colleges.
- The college is interested in hiring a full-time set of tutors that are properly trained for the type of courses and students seen by those in the engineering college.

Support Needed

- The college would be well assisted by central administration and helping to hire additional minority and women faculty.
- Retention is believed to be tied to their support system, which currently does not exist for first-generation, low income, minority, and women students.
- Assist the college in focusing its growth at the graduate, and not the undergraduate level.
- Assist by developing assessment and metrics to examine which retention strategies are proving effective, and which are not.

Honors College

Current Structure/Approach

The issue of retention within the Honors College is perhaps less stark than in any other. Generally, the retention and persistence is notably higher in this college than any other. This said, the issue of retention within the Honors college is perhaps less clear than in any other because many Honors-designated students are formally declared in the majors of other colleges. However, the college does report several issues related to retention that they are beginning to address, including:

- understanding that while students may leave the Honors College, they don't necessarily leave the University
- retention in the Honors College is affected directly by the availability of honor sections
- additional honors sections of courses are needed
- the most common reason offered by students leaving the Honors College that students offer, is the unavailability of curriculum to make appropriate progress toward degree

Initiatives

One of the methods that the college has undertaken to retain students within its unit is, what the Dean referred to as, emphasizing "points of difference." Planned initiatives include the following:

- given its record enrollment, developing new methods of engagement with students, especially to assess issues impacting them
- involvement of students in longer term projects outside the classroom where their input is valued and impact felt
- educating students on how the GPA is calculated and the ramifications of grade replacement
- strengthening learning communities
- branding the Honors College experience

Support Needed

- Resources to supplement faculty to teach overload honors sections
- Additional staff to support record enrollment
- Renewable scholarships
- Additional staff to support to targeted retention

College of Human Sciences

Current Structure/Approach

The college is aware of the need to systemically and strategically focus its centralized retention efforts and activities. Moreover, it is taking substantive action to accomplish this, beginning with the structure and responsibilities of its Student Services personnel. The College of Human Sciences (COHS) has restructured the Student Services organizational chart to place a higher emphasis on student engagement and retention. To provide a synergistic approach to student services, the new organizational structure incorporates a team methodology with leaders in the areas of 1) Entering Freshmen Recruitment, 2) Transfer Student Recruitment, 3) Academic Advising, and 4) Student Engagement and Retention. Specifically, this recent team-oriented reorganization has been manifested in the following ways:

- Established an Office of Student Recruitment, Engagement, and Retention
- Repurposed personnel to focus on engagement and retention as a strategic priority – Director of Student Engagement and Retention
- Bifurcated recruitment responsibilities into Entering Freshmen and Transfer Student Recruiting – redirected funds to support a new Transfer Student Recruitment Unit Coordinator and converted the other recruiter to serve as Entering Freshmen Recruitment Unit Coordinator
- Restructured Academic Advising Office
 - Reclassified 3 Academic Advisors as Senior Academic Advisors (exempt) with additional responsibilities related to recruitment, student employee development, and student recognition

Beyond these structural changes, the college is investigating and embarking on approaches that accomplish the following:

- Focus retention efforts on students at risk of attrition.
- Explore methods of attracting external experts on retention and persistence to speak to their college and further train their staff.
- Support its academic advisors and their interest in, and attendance of, NACADA.
- Explore how to take advantage of advising professional development, including the Advising Academy and other offerings provided through the Division of Undergraduate Education.

Initiatives

- Developing a more coherent and deliberate overall retention blueprint for the college. This project should help the newly reorganized Student Services personnel to work more cohesively and effectively.

- Revamping the college scholarship process to enhance recruiting and encourage retention. COHS believes recruiting and retention will be substantially aided by a process that promises scholarships on the front-end *and* for consecutive years (provided students continue to perform). The new process might partially match/leverage scholarship money for presidential scholars and proven achiever transfer scholars to potentially increase the acceptance rate of high quality students. COHS is currently analyzing prior years' data to inform decisions about a revised process, and to ensure fiscal responsibility without over-commitment.
- Collecting digital comment cards for students to share concerns or feedback, with the option for the comments to remain confidential
- Running a COHS survey to properly assess student needs
- Offering HUSC 1100 – freshman transition course with a higher first semester/first year retention rate than COHS students that do not take the course. Potentially, this may include altering the course to provide smaller sections with career cluster-specific cohorts in Fall 2014
- Offering PADR 0041 for Human Sciences students on scholastic probation – taught by Director of Student Engagement and Retention
- Actively participating in university calling campaigns for unregistered students
- Reestablishing the Dean's Leadership Council for Presidents of COHS student organizations and Senators to provide a greater connection between students and administration

Support Needed

- Open access to relevant student data specific to the College and Programs to assist in goal-setting and benchmarking
- Availability of predictive analytics to assist in their centralized, and eventually the development of department specific, retention activities
- Funds for travel to Enrollment Management Best Practices Conferences/Seminars
- Funds to support student services staff initiatives
- Additional staff for retention and recruitment

College of Media & Communication

Current Structure/Approach

- The college provides a retention framework in the form of an Info Graphic.
- The document contained a number of current and future initiatives related to retention, that include the following:
 - hiring advisors for probationary students
 - students that have between a 2.0 – 2.5 GPA will be required to enroll in a studies skills course
 - students facing adversity, will now be required to attend a face-to-face meeting with their advisors
 - the web presence of additional retention services are being improved
 - the college has developed a new freshman seminar course that is specific to its discipline

- the college has developed a new learning community in the residence halls
- the college is requiring that students complete the StrengthsQuest instrument

Initiatives

- Focus on “inside retention,” which has resulted in a first year freshman retention increase of 62% to 72%.
- The college will also implement its own “student ambassadors” program
- Other retention initiatives include:
 - augmenting the branding and publicity for the major and career options for those who are retained
 - create career counseling a portfolio development course
 - create more portfolio based outcome courses
 - expand undergraduate
 - research and mentoring opportunities
 - offer additional loyalty building events and programs
 - bridge courses between intro to the college and senior courses that builds college loyalty among students

Support Needed

- Hiring of an additional academic advisor for fall 2014 and one additional recruiter
- Helping to expand undergraduate research and mentoring opportunities, including internships and service learning
- Re-examine existing policies that appear a preventative to retention, i.e. hosting college events given current food and entertainment policies

College of Visual & Performing Arts

Current Structure/Approach

The college initiated a fall 2013 meeting of its entire administrative leadership to focus on the issue of retention. Topics of that meeting included:

- examination of academic suspension procedures
- consideration of the impact of summer enrollment and “getting back to campus” as an important aspect of retention in the specific college
- considering the different retention services for undergraduate versus graduate students
- consider the development of “enticement scholarships” that would incentivize students to return to complete their education
- possible development of recovery scholarships

Initiatives

An important issue is the cost of TTU summer courses versus community colleges. TTU-VPA is not a competitive value for students, versus community colleges. Students pursue their education at a community college based on cost. Often these students do not return to TTU. Accordingly,

- the college is examining long-range plans for summer enrollment,
- the college intends to better market its courses and the value of persisting at TTU, and
- the college is considering how to develop specialized courses that would be of unique interest in the summer, and which community colleges could not offer,, i.e. accelerated for we courses that are highly creative and nimble

Support Needed

- additional professional development for academic advisors
- assistance with international students
- additional training for faculty and instructors to early identify those students at risk of departing the University prematurely

Immediate Recommendations by Stages of Student Enrollment

Prospective Students

Current Initiatives

The Office of Admissions engages students via an enormous variety of communications campaigns. Their technology and overall process is considerable and should continue to be leveraged.

Recommendations

- These pre-enrollment communications might be improved through better **integration** with important targeted messages from the academic units.
- Academic units should likewise **utilize the technologies and processes** embraced by our marketing and recruiting experts.

Admitted Students

Current Initiatives

- Admitted Student Dashboard is a website that provides all new students, transfer and freshman, a ‘one stop shop’ experience for all TTU processes required for enrollment (testing, housing, meal plans, etc.)
- Communication with admitted students not registered for Red Raider Orientation.
- Communication with students registered for Red Raider Orientation but not in attendance.

Recommendations

- Work with application development to improve the Admitted Student Dashboard. This list of the processes should take new students through every process needed to enroll in classes. All advisors involved with orientation should receive training on how to use the dashboard.
- Utilize the admitted student receptions, Connect Tech, to encourage student use of the dashboard.
- Align the dashboard to be used for prospective and admitted transfer students for the Office of Community College and Transfer Relations.
- Place late admits into Texas Tech Undecided (TTUD) for discovery and engage academic advising. Texas Tech University's experience suggests that students who enroll closer to the start of fall term have a significantly greater tendency to withdraw. If this is confirmed by retention analytics, enforcement of deadlines can assist students (and their friends/families) in preparation for a successful university experience.
- Assimilate students to university culture through the use of more consistent terminology and processes as these are documented through a coordinated effort to provide advisor training & professional development (described below).

Students Transferring In

Current Initiatives

- Transfer ambassadors work to make contact with admitted transfer students and serve as a resource through orientation and first semester at TTU.
- The Office of Community College & Transfer Relations (CCTR) assists transfer students to review transfer hours and degree completion options.

Recommendations

- Identify transfer students admitted as degree-seeking, yet are pursuing only pre-requisites or are enrolled a **minimum number of courses** (3 or 6 hours). Develop intervention strategies for these students that encourage communication on and alternatives for degree programs.
- Implement the early identification and engagement of students transferring with **excessive hours**. Develop monitoring and intervention strategies for these transfer students.
- Require transfer students with **high numbers of earned hours** (60+ transfer credits) to work with CCTR from admittance until orientation to facilitate a better understanding of restricted majors and available degree completion options.
- Develop strategies and programs that will increase engagement and support of students admitted through the **provisional or gateway** programs.

Entering Students

Current Initiatives

Red Raider Orientation (RRO) serves as a recruitment, enrollment, and college transition event. All involved with students and their families at orientation can determine a student's decision to attend Texas Tech. In addition, all programming is designed to encourage seamless transition from high school to college, while introducing students to the campus departments and services that will assist with the retention of students. In the RRO process, the following retention initiatives are in place:

- Monitoring and communication with students who have course registration obstacles, including meningitis holds, TSI holds, placement testing, etc. Encourage completion of requirements before orientation; assist with requirements during orientation as needed.
- Review registered hours / types of courses new students are enrolled. Many students are enrolled in minimal hours and types of courses due to course availability.
- Communication with Red Raider Orientation students in attendance but not registered for summer or fall courses. Coordinate with colleges to contact and encourage students to enroll in courses.

Raider Ready, IS1100 and IS3100 is a seminar course designed for students to successfully manage the transition to Texas Tech from their current institution.

Additional TTU First Year Programs

- University Student Housing offers learning communities by interest and content area.
- University Student Housing leads efforts to utilize MAP-Works as an early-alert intervention within the residence halls.
- Campus-wide Welcome week activities are designed to introduce new students to campus involvement and departmental activities. Occurs the week before each fall and spring semester and provides opportunities for students to become acclimated to the campus environment before classes begin.

Recommendations

- Improve **integration** of general Red Raider Orientation processes, communications, and desired outcomes to leverage and complement the sustained efforts of academic colleges.
- Monitor **course availability** for new students throughout the summer and provide appropriate course alternatives for new students.
- Conduct a review of **late admits** and admission criteria (i.e. provisional, gateway, or regular admit) to determine early alert measures. Require interventions for late admits and other populations of students where retention performance gaps can be documented.
- Encourage students to enroll in **15 credit hours** each semester, up from the current median enrollment of 14 SCH. (Target: January 2014 RRO)
- Provide initial course advice through the vehicle of practical **advisor-led** training through hands-on **automated degree auditing** via DegreeWorks. (Target: Summer 2015)

- Promote consistent use of **Action Plan/Blueprint** in academic advising sessions. The approach should encourage students to adopt beneficial academic and co-curricular behaviors, identify opportunities for improvement, and utilize resources where appropriate. (Target: Summer 2014 RRO)
- Offer **leadership and academic skill development** programs for newly admitted students.
- Offer Red Raider CAMP as an optional and extended orientation experience focused on leadership development and engagement. **Red Raider CAMP** is an optional program designed to provide new students with information and skills related to college transition, including leadership development, bystander intervention, and success in the classroom and beyond.
- Develop a **DFW-Bridge**. This summer, week-long, optional program will provide academic skill development for courses with high proportions of students earning grades of D, F, or who Withdraw/Drop from the course (DFW).
- Develop **Raider Ready program for sophomores** Texas Tech University offers numerous high impact, retention-focused practices for first year students, including learning communities, FIGS, and freshman seminar. Following the first year, students often move off campus, experience new demands and challenges without the same support mechanisms utilized previously. Persistence and retention rates for sophomores are an area of concern for the University. Students entering their third semester at TTU and 30+ semester credit hours could be positively impacted by a specialized high-impact practice to further their connection and engagement at TTU and assist with their exploration and confirmation of major selection. Initiatives that will allow TTU to decrease the typical 10 percent sophomore attrition may be as simple as the addition of a sophomore reorientation program, or designing a seminar similar to IS 1100 for sophomores/juniors. These offerings should culminate with a Senior IS Seminar that focuses on “college to career” transitions. Other tailored programming should also be developed and integrated into the advising and engagement experience of different student sub-populations.
- Expand Raider Ready IS 3100 the one hour **transfer-student seminar** course designed for transfer students to successfully manage the transition to Texas Tech from their transferring institution.

Re-Entering Students

Current Initiatives

- The Office of the Provost, via University Advising, provides dedicated academic advisors and the Academic Recovery Process to individually engage, equip, empower, and encourage motivated students who, for whatever reason, have found themselves on academic probation or academic suspension. Through intensive academic advising, students will develop a personalized Academic Recovery Plan that will investigate the causes of past underperformance, anticipate future challenges, identify and implement strategies for addressing these issues, and construct short- and long-term course selections to speed and support recovery. This generalized Academic Recovery Process is required for all Undecided/Exploratory students, all Pre-Engineering students, and declared students in some academic colleges. Students who are denied when applying to return to any specific academic college from academic suspension may be eligible to return to the

university after successfully completing an approved Academic Recovery Plan. Details of the Academic Recovery advising process are provided online at <http://advising.ttu.edu/recover>.

Recommendations

- Expand and formalize the **re-entry process** for Former Tech students. Currently, there is no institutionally-consistent process for Former Tech students to re-enter the institution. Review of academic status and progress toward degree should be incorporated into re-entry processes.
- Develop intervention process to **monitor and support currently enrolled Former Tech** students that are not meeting academic requirements, including progress toward degree, major change processes, academic recovery processes, etc.

Students in Curricular Transition

Current Initiatives

Pre-Major students who have yet to declare or qualify for their desired academic majors receive degree-relevant academic advising and strategies for academic success will facilitate their progress toward graduation. This begins prior to RRO where they are encouraged to take the FOCUS assessment, and continues through the Discovery! advising program, for those who are formally designated as TTUD (Texas Tech Undecided & Exploratory) or in an appropriate Pre-Major designation. This continues with campus events like the *Majors and Minors Fair* which provides students with an opportunity to meet, in one venue, with faculty and professional advisors to discuss the majors and minors offered at Texas Tech as well as the available career opportunities connected to each major. The purpose of the fair is to promote major exploration, to help students move forward in the process of declaring a major or minor, and to help uncertain students learn more about the many academic opportunities available at Texas Tech.

Recommendations

- **Monitor and analyze major changes** of all students, beginning prior to Red Raider Orientation. Develop intervention strategies for students that change major 2+ times prior to enrollment of classes and are not classified as Undeclared/Undecided
- Create and communicate a comprehensive, consistent, and systematic **institutional process** for directing students to major exploration and other majors. (Target: Summer 2014)
- Improve **communications** in the admissions process, and strongly recommend course requirements for entering students to provide much needed opportunity for students to begin to interact with a wider variety of campus resources, support units and further engage the major exploration process.
- Require mandatory and **automatic transition** of students leaving restricted majors due to GPA requirements (Engineering expulsion, Business GPA requirements)

All Currently Enrolled Students

Current Initiatives

TTU Institutional Reporting (IRM) provides data and analysis that meets the state's standards, and accurately describes the institution's activities.

As detailed previously, a host of academic support offerings are provided throughout the campus by the Academic Colleges, and centrally by several departments. From SOAR's tutoring and supplemental instruction to MVP's work with veterans to Mentor Tech's one-to-one mentoring of historically underrepresented students, these programs engage, equip, encourage, and empower students to excel in the university environment and beyond.

Recommendations

- Inform students when they are no **longer on academic probation**. Currently students are informed about their academic status of probation and suspension. However, students are not informed when their academic status returns to good standing. During past enrollment initiatives many students reported not registering for courses because they were unaware that they are in good standing.
- Create a new Office of Retention Analytics to provide **nimble and detailed analysis** of student retention trends, course combinations, degree plan and course offering (in)efficiencies, failure triggers, at-risk populations, effective interventions, and public recognition/reward for innovations in undergraduate education.
- Improve **identification of students** who would benefit from retention interventions/programs, coordinate marketing, and increase participation in these programs.
- Institute **mandatory mid-term grading** for all students or for all students through the end of their sophomore fourth semester; this must be backed by policy, supported by results.
- Expand clusters of **block-scheduled courses** whose instructors have collaboratively developed a curriculum that is tightly integrated and perceptibly relevant to students, including those who are pursuing or exploring particular academic majors. This will be particularly effective when instructors are also encouraged to find opportunities for assignments, readings, and projects that integrate learning across/between their curricular disciplines.
- **Champion undergraduate academic achievement** through the continual and prominent public praise, recognition, reward, and media coverage of student groups and individuals whose success stories encourage hard work, personal responsibility, and utilization of support resources. Creative and interesting recognition/reward might include temporary Presidential parking for supplemental instruction, book scholarships for students successfully returning from Academic Suspension, Greek Organizations with the highest GPA standards for membership, mentor/mentee highlights, early-advising reminders through funny and interesting viral/social media campaigns, academic messaging in bus wraps, digital signage, etc.
- **Ensure** that these efforts are adequately resourced, continually improved, and that their best practices are acknowledged, rewarded, and disseminated.

Exiting Students

Current Initiatives

Certain curricula provide capstone experiences that help students synthesize and make meaning of their undergraduate experience. The TLPDC is helping faculty improve their offerings, and supporting the Scholarship of Teaching and Learning (SoTL) at Texas Tech.

The University Career Center connects students with employers.

Events like Red Raider Orientation, the Red Raider Ring Ceremony, Convocation, and Commencement help students recognize the transitions between various stages of their post-secondary education.

Recommendations

- Integrate **capstone** experiences into all Texas Tech degree programs.
- Encourage and foster **college-specific career events** and relationships for exiting students.
- Continue and increase support for these symbolic **rites of passage** through intentional communications and efforts that will increase the participation of faculty, staff, and students.
- Review and re-design **Academic Suspension and Withdrawal** processes to better support the advisement of outgoing students and speed their return (where appropriate).

Conclusion

Research has long supported the importance of matching student’s inherent motivation to learn, their current academic abilities, with the institution’s overall social and academic expectations. This matching process, which Tinto refers to as a “student integration model,” creates a campus climate of reciprocal commitment to individual persistence and academic success.

In reviewing the broad and diverse retention resources available across the University, it is clear that Texas Tech can serve as a state and national leader in the areas of retention, persistence, and college-to-career readiness. The human and organizational capital required to implement a comprehensive retention strategy has long existed at Texas Tech.

Given the changing demographics of the state, the rise of first generation college students, transfer students and the growth of military veterans and family members entering higher education, there appears to be no more opportune time for Texas Tech to once again to establish its national reputation by focusing on fundamental innovation in retention, persistence, and academic excellence. Our deliberate pursuit of the above bulleted recommendations is a first step toward fully seizing this opportunity.

Brief List of Reference Articles

- Addus, A. A., Chen, D., & Khan, A. S. (2007). Academic performance and advisement of university students: a case study. *College Student Journal*, 41(2), 316–326. Retrieved from <http://j.mp/1g2WQm5>
- Amelink, C. T., & Meszaros, P. S. (2011). A comparison of educational factors promoting or discouraging the intent to remain in engineering by gender. *European Journal of Engineering Education*, 36(1), 47–62. doi:10.1080/03043797.2010.531695
- Astone, B., Nuñez-Wormack, E., & Smodlaka, I. (1989). Intensive academic advisement: A model for retention. *College and University*, 65(1), 31–43. Retrieved from <http://j.mp/1ekyUcM>
- Braxton, J. M., Doyle, W. R., Hartley III, H. V., Hirschy, A. S., Jones, W. A., & McLendon, M. K. (2013). *Rethinking college student retention* (First edition.). San Francisco, CA: Jossey-Bass.
- Coll, K. M., & Stewart, R. A. (2002). Collaboration between counseling services and an academic program: An exploratory study of student outcome. *Journal of College Counseling*, 5(2), 135–141. doi:10.1002/j.2161-1882.2002.tb00215.x
- Credle, J. O., & Dean, G. J. (1991). A comprehensive model for enhancing black student retention in higher education. *Journal of Multicultural Counseling & Development*, 19(4), 158–165. doi:10.1002/j.2161-1912.1991.tb00552.x
- Dale, P. M., & Zych, T. (1996). A successful college retention program. *College Student Journal*, 30(3), 354. Retrieved from <http://j.mp/1g2XkJO>
- Edlbi, M. (2012, September 14). The effect of support services on GPA and timely baccalaureate attainment among community college transfer students at the University of California (UC) at Davis (Doctoral Dissertation). California State University, Sacramento, CA. Retrieved from <http://csus-dspace.calstate.edu/handle/10211.9/1743>
- Engstrom, C., & Tinto, V. (2008). Access without support is not opportunity. *Change: The Magazine of Higher Learning*, 40(1), 46–50. doi:10.3200/CHNG.40.1.46-50
- Fowler, P. R., & Boylan, H. R. (2010). Increasing student success and retention: A multidimensional approach. *Journal of Developmental Education*, 34(2), 2–4,6,8–10. Retrieved from <http://eric.ed.gov/?id=EJ986268>
- Garnett, D. T. (1990). Retention strategies for high-risk students at a four-year university. *NACADA Journal*, 10(1), 22–25. doi:10.12930/0271-9517-10.1.22
- Habley, W. R., Bloom, J. L., & Robbins, S. B. (2012). *Increasing persistence: research-based strategies for college student success* (First edition.). San Francisco: Jossey-Bass, a Wiley Imprint.
- Hughes, P. (n.d.). Committee on Academic Advising & Retention (CAAR) Strategic Plan. Texas Tech University Division of Undergraduate Education & Student Affairs. Retrieved from <http://www.depts.ttu.edu/provost/acadaffairs/advising.php>
- Kinloch, G. C., Frost, G. A., & MacKay, C. (1993). Academic dismissal, readmission conditions, and retention: A study of social science majors. *NACADA Journal*, 13(1), 18–22. doi:10.12930/0271-9517-13.1.18
- Kuh, G. D. (2008). High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges and Universities. Retrieved from <https://secure2.aacu.org/store/detail.aspx?id=E-HIGHIMP>

- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2007). Piecing together the student success puzzle: Research, propositions, and recommendations. *ASHE Higher Education Report*, 32(5), 1–182. [doi:10.1002/aehe.3205](https://doi.org/10.1002/aehe.3205)
- Lee, W. Y. (1999). Striving toward effective retention: The effect of race on mentoring African American students. *Peabody Journal of Education*, 74(2), 27–43. [doi:10.1207/s15327930pje7402_4](https://doi.org/10.1207/s15327930pje7402_4)
- Lin, J.-L., Lin, J.-H., & Hwang, K.-S. (2012). The number of students needed for undecided programs at a college from the supply-chain viewpoint. *Mathematical Problems in Engineering*, 2012. [doi:10.1155/2012/276519](https://doi.org/10.1155/2012/276519)
- McGrath, S. M., & Burd, G. D. (2012). A success course for freshmen on academic probation: Persistence and graduation outcomes. *NACADA Journal*, 32(1), 43–52. [doi:10.12930/0271-9517-32.1.43](https://doi.org/10.12930/0271-9517-32.1.43)
- Micceri, T. (2001). Change your major and double your graduation chances. (pp. 1–8). Presented at the AIR Annual Forum, Long Beach, CA. Retrieved from <http://j.mp/17Axyt6>
- Morey, J. T., & Dansereau, D. F. (2010). Decision-making strategies for college students. *Journal of College Counseling*, 13(2), 155–168. [doi:10.1002/j.2161-1882.2010.tb00056.x](https://doi.org/10.1002/j.2161-1882.2010.tb00056.x)
- Phillips-Miller, D. L., & Morrison, C. R. (1999). Innovative Practice: Systemic Problem Solving: Retention and the Role of a Student Counseling Center. *Journal of College Counseling*, 2(2), 180–183. [doi:10.1002/j.2161-1882.1999.tb00154.x](https://doi.org/10.1002/j.2161-1882.1999.tb00154.x)
- Rawlins, W. K., & Rawlins, S. P. (2005). Academic advising as friendship. *NACADA Journal*, 25(2), 10–19. [doi:10.12930/0271-9517-25.2.10](https://doi.org/10.12930/0271-9517-25.2.10)
- Reisberg, L. (1999, October 8). Colleges struggle to keep would-be dropouts enrolled. *The Chronicle of Higher Education*. Retrieved from <http://j.mp/18WVrbD>
- Reyes, N. (1997). Holding on to what they've got: A look at programs designed to keep college students in college. *Black Issues in Higher Education*, 13(26), 36–41. Retrieved from <http://j.mp/1fswtIN>
- Seidman, A. (2012). Chapter 12: Taking Action. In *College student retention: formula for student success* (2nd ed., pp. 267–284). Lanham, Md: Rowman & Littlefield Publishers : Published in partnership with the American Council on Education.
- Swecker, H. K., Fifolt, M., & Searby, L. (2013). Academic advising and first-generation college students: A quantitative study on student retention. *NACADA Journal*, 33(1), 46–53. [doi:10.12930/NACADA-13-192](https://doi.org/10.12930/NACADA-13-192)
- Torres, V., Reiser, A., LePeau, L., Davis, L., & Ruder, J. (2006). A model of first-generation Latino/a college students' approach to seeking academic information. *NACADA Journal*, 26(2), 65–70. [doi:10.12930/0271-9517-26.2.65](https://doi.org/10.12930/0271-9517-26.2.65)
- Umbricht, M. R. (2012, May 22). First in, last out: Time-to-degree of first-generation students (Masters Thesis). University of Illinois at Urbana-Champaign, Urbana, IL. Retrieved from <https://www.ideals.illinois.edu/handle/2142/31046>