

**Traveling Successfully on  
the Community College Pathway**

# TRUCCS

*The research and findings of the  
TRANSFER AND RETENTION OF URBAN  
COMMUNITY COLLEGE STUDENTS project*



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LINDA SERRA HAGEDORN, PH.D.  
*Director, TRUCCS project*

The Transfer and Retention of Urban Community College Students (TRUCCS) project was the culmination of a dream and a response to personal experiences. As a former urban community college student, I was personally aware of the steep road to success. Unlike friends who were attending universities, I was pushed and pulled by academic requirements, job responsibilities, and family situations. While education was certainly my goal, it often got muddled among the other facets of life's necessities. My path was also a crooked one as I alternated between two colleges: sometimes taking a course at each during the same semester in order to enroll in the courses I needed, at times that would accommodate my working schedule. I persevered, transferred, and earned a bachelor's degree.

A decade passed between my role as community college student and that of community college faculty member. Interestingly, I was hired to teach in the vocational area of Electronics Technology at one of the community colleges at which I had taken courses. While being one of the few female students in this field was a challenge, being the ONLY female instructor in the division was an even bigger one. I credit my minority role and the barriers I faced to an increased understanding of the obstacles faced by many community college students. Most of my students were balancing heavy loads with high ambitions and big dreams, yet most of my students left the program sans a degree or certificate. Some came back a few



semesters later, and others just faded into jobs either related or unrelated to electronics.

Another decade and another role: back to being a student, but this time a graduate student majoring in higher education. My goal at the time was to prepare for an administrative role in community colleges. While in doctoral education, my mind was opened to the power of and need for research, and I altered my occupational goals to include becoming a faculty member and researcher at a university.

Thus, with a newly minted Ph.D., I accepted a position as a Program Chair for the Community College Leadership Program at the University of Southern California. My role was to develop a program that would prepare individuals for leadership roles in the nation's community colleges. While teaching individuals who were themselves involved in community colleges was rewarding, I wanted a closer connection to these institutions as well as a more active role in assisting community college students to success.

The TRUCCS project is the result of that yearning. Several colleagues and I wrote a proposal to the U.S. Department of Education, Office of Educational Research and Improvement, for a Field-Initiated Study. We were thrilled to learn that our study was chosen to be funded for a three-year longitudinal project. We were even more thrilled when the Los Angeles Community College District offered their support and guidance for the project. Further, after three years, Lumina Foundation for Education saw the value

of the work and extended the project for three more years.

Since its inception, the project has been directed from the literature, empirical evidence, and my heart. The use of transcripts and other college records came from my experiences and "gut" that community college student success will only be achieved when students follow specific focused academic paths. Dwelling on social situations or applying a deficit model may explain student "non-success," but does nothing to further our knowledge on directing students to their goals. TRUCCS has pioneered transcript analysis and is proud of the results. This booklet provides a glimpse of our work and our findings.

I certainly want to thank the U.S. Department of Education, Lumina Foundation, the Los Angeles Community College District, the University of Southern California, the University of Florida, the numerous research assistants and others who assisted in the project, and the 5,000 TRUCCS students who participated in the project.

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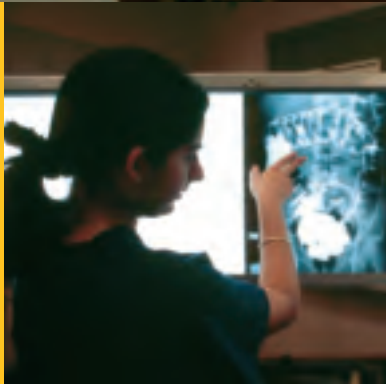
The following is a list of many of the individuals who have assisted with the TRUCCS project at one point or another during its five-year journey:

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Scott Cypers	Linda Pace	





*The origin of* **TRUCCS**



# THE TRANSFER OF URBAN COMMUNITY COLLEGE STUDENTS



*Helping students complete their college educations*

WHILE FEW INDIVIDUALS familiar with the American postsecondary system would disagree with the simple statement that community colleges differ from their four-year counterparts, much of the research on community colleges appears to ignore blatant and obvious differences. Community colleges and their students have generally been studied through the lens of research universities, using identical conceptual models, variables, and measures. This situation is akin to treating a giraffe like a hippopotamus. While both animals have four legs, are large, and eat vegetation, put them both near a pond and major behavioral differences become quickly obvious.

The study of college retention illustrates a clear example of the “disconnect” between community colleges and four-year universities. The traditional approach is to apply the retention model posited by Tinto in 1975. The reason why this model is so famous, applied so often, and has remained respected through more than three decades is because of its commonsense simplicity. According to the Tinto theory, university students must abandon their old lives and become socially and academically integrated into their new post-

secondary environments in order to succeed. However, when considering community college students, Tinto’s model provides a poor fit.

Unlike their four-year counterparts, community college students do NOT abandon their pre-college lives. The vast majority of community college students continue to live in the same homes, to work, to take care of families, and to socialize within the same social circles that defined their pre-college lives. Rather than abandon their previous lifestyles, community college students merely add college to their existing agendas.

Yet another example of the “disconnect” concerns the enrollment pattern differences between community college and university students. While most universities expect, and even demand, continuous enrollment from one semester to the next, community college students often skip a semester or a year; for some there may be a lapse as long as a decade or more between enrollments. In general, patterns of non-continuous enrollment are common among community college students.

Community college students may even differ from university students in the very definition of what it means to be a student. For example, if a



university student who enrolled in a full slate of courses (typically 12 to 21 credits) subsequently dropped all but one course (3 credits), the student would likely face serious consequences. At a minimum, the university might review the appropriateness of allowing the student to remain in university housing, be admitted to sporting events at the student rates, and/or maintain library privileges. Many institutions would go as far as to bar the student from subsequent enrollment due to lack of progress. In a community college, however, dropping courses is common and usually carries no significant repercussions other than lengthening the time to degree or transfer. It is not uncommon for community college students to experience a full semester of non-success (dropping all courses, failing all courses, or a combination), and then to return the next semester to try again. Indeed while a university student may sometimes have a “bad” semester, the clear difference is, that in most cases, a “bad” semester generally means that the student will be put on probation, and should the pattern persist, continued enrollment will be barred by the university. Although many community colleges do have a system of probation, the rules are generally less stringent, and rarely is a student who wants to try again prevented from doing so.

The Transfer and Retention of Urban Community College Students Project (TRUCCS) began with recognition of the differences between community colleges and universities and proceeded to collect and use data to better understand the differences as well as to create a serious

research agenda to isolate and better understand the factors that predict success among urban community college students.

### **Why Study Community Colleges?**

The community college is a peculiarly American institution with a foundational belief in self-development and an unquenchable mission to extend education beyond the privileged classes. Now in its second century, the community college continues its tripartite mission: 1) university transfer, 2) vocational and certificate programs, and 3) continuing education (Cohen & Brawer, 2003). The community college system has been and remains the postsecondary starting point for nontraditional students including minorities, those over the traditional college age, of low socioeconomic status, working adults, parents, and others (Borden, 2004; Hagedorn, 2005; London, 1992; Richardson & Skinner, 1992; Willett, 1989). Despite a democratic mission and the good intentions of faculty, administrators, and staff, the retention and transfer rates of community colleges remain low and problematic. Thus, in order to assist students who are most at risk of not achieving their postsecondary goals, emphasis belongs on community colleges.

### **Importance of a College Education**

Community colleges are significant institutions because they provide postsecondary access to people who would likely not attend college if such avenues did not exist. Attending and graduating from college is correlated with many positive



outcomes, including increased lifetime earnings, better health, and higher levels of civic engagement (Mazumder, 2003). The importance of college grows more significant as the world becomes more technologically sophisticated and complex. Most individuals will not have the benefit of a college degree, despite its elevated importance. In fact, approximately one-third of all high school students do not persist to graduation. While more than half of all students who do graduate will enroll in college, about a third will not persist into the second year, while a third of those remaining will exit prior to graduation (National Center for Public Policy and Higher Education, 2004). While these statistics are somewhat startling, it is important to note that low-income students and students of color are disproportionately less likely to be among the group of high school and college graduates.

### **Remedial and Compensatory Education**

Remedial and compensatory education extends through college. Simply put, many of those students who beat the odds and find themselves in college require coursework and assistance to bring them up to college level. As might be expected, low-income students and students of color are more likely than other students to need remediation (U.S. Department of Education, 1995). While most colleges and universities provide remedial courses, they are much more prevalent at community colleges. Combining these two facts, a surprising 80% of minority students in commu-

nity colleges enroll in one or more compensatory courses (Nora, Barlow, & Crisp, 2005) and few emerge into college level work (Hagedorn et al, 1999; Hagedorn, 2004; Nora, Rendon, & Cuadraz, 1999).

### **A National Picture of Community Colleges**

Latest estimates indicate that enrollment in the nation's community colleges is in excess of 10 million (with more than 5 million students enrolled in credit courses) (Fall Enrollment in Postsecondary Institutions, 1997; NCES, 1999). Community colleges enroll approximately 44% of all undergraduates, one-third of whom are underrepresented ethnic minorities, including African Americans (11.5%), Hispanics (12.3%), Asian or Pacific Islanders (6.2%), American Indian/Alaskan Natives (1.3%), and Nonresident Aliens (1.4%) (Fall Enrollment in Postsecondary Institutions, 1997; NCES, 1999). Women comprise over half of the total community college population (Fall Enrollment in Postsecondary Institutions, 1997; NCES, 1999). In terms of funding, 49.9% of students attending the nation's community colleges received income-based financial aid (AACC, 1999).

Certainly the nation's community colleges deserve an "A" for their efforts to reach and enroll students who otherwise would not or could not attend college. However, a review of completion and transfer rates of these same students would at best yield a grade of "D." For example, an ongoing longitudinal study at the Postsecondary



Institutional Studies Program, found that over 38% of students beginning the associate's degree program in 1989 either dropped out at least once or had not yet completed the degree eight years later (NCES, 1999). According to the National Center for Education Statistics, of all students enrolled in two-year colleges in 1997, only 4.8% completed their degrees that year (Morgan, 1999).

### **The Purpose and Description of TRUCCS**

TRUCCS began in 1999 with a U. S. Department of Education Office of Educational Research and Improvement Field Initiated Studies grant (No. R305T000154). TRUCCS specifically studied students from the nine campuses of the Los Angeles Community College District. The study was charged with the investigation of the factors (both organizational and individual) that promote retention and persistence of urban community college students. In addition, the project was to address issues of remediation, patterns of reverse transfer, social integration, and course-taking patterns. The diversity of the Los Angeles Community College District was chosen for its ability to allow multiple comparisons by different groups of students (ethnicity, age, socioeconomic status, and the like). The project collected multiple types of data at staggered points in students' educational lives. The project began with the development of a new 47-item questionnaire that reflected the community college experience. The instrument was designed for a district in which only 43% of students were native English speakers. The question asking for student ethnicity had 22

choices plus a write-in just in case a respondent could not find a suitable category. In addition, other items pertaining to language ability and usage were included. After a pilot study and subsequent fine-tuning, the final instrument was administered during the Spring 2001 semester to 5,011 students across 241 classrooms.

Beginning in the summer of 2001 and every semester thereafter, transcript data were collected for all students who signed the consent forms (96% of the sample). Focus groups and individual interviews were conducted with students, faculty, and administrators across the district at various times of the project.

The sampling design of the project was unique and rested on stratification by remedial and standard courses, learning communities, and vocational and gateway courses. The sample was designed for hypotheses about the effect of various college features on retention and transfer. Since the emphasis was thus on explanation rather than description, neither random sampling nor random assignment was feasible for these conceptual objectives. Instead, the sampling was characteristic of quasi-experimental research. Rather than seeking external validity, the focus was on the internal validity of the design. Thus, the sampling plan maximized variation in the independent variables in the sample relative to the hypotheses to allow the researchers to make internally valid comparisons of sub-groups.

The devised sampling plan was to produce a sample that allowed the research team to answer the following research questions:





1. What are the specific factors (both organizational and individual) that promote retention and persistence of students enrolled in the Los Angeles Community College District?
2. Do the factors promoting success (or reducing the likelihood of non-success) differ by ethnicity, age, gender, socioeconomic status, enrollment status (full/part time), or other demographic descriptor?
3. Do the factors promoting success (or reducing the likelihood of non-success) evolve or change through time? In other words, what factors promote retention through year one? What factors promote retention through year two? And, what factors promote transfer to a four-year institution?

### **Sampling Procedures**

Initially we explored the connection of student transfer from the Los Angeles Community College District (LACCD) to the California State University (CSU) and the University of California (UC) systems through the use of the Right to Know database. We sought to discover what courses, or types of courses, LACCD students who later transferred took. Despite our exploration, we could not isolate a pattern. We noted with interest that while many students who had taken English 101 and/or Psychology 101 while community college students transferred, many students who transferred did not take these courses. Our next exploration included a detailed study of the LACCD college catalogs and class schedules.

We learned that although there was a district structure of offerings in English, many campuses offered courses that were unique. Each of the nine colleges, however, maintained a basic structure that we define as three branches. Specifically, the lower branch consists of courses that are described by the district as non-district credit (labeled NDC in most of the college catalogs). Some of these courses may be considered basic skills. Most provide district level credit, but do not provide transferable credit to the four-year colleges. Students enrolling in the NDC courses include those with transfer aspirations, those in occupational programs, as well as students who have progressed through the ESL ranks. The middle or second branch of English consisted of courses equivalent to first-year English courses. Specifically, English 101 and 102 (or equivalent) are offered consistently throughout the district. These courses carry the California Articulation Numbers of CAN2 and CAN4. To determine the transferability of courses we consulted the Statewide Student Information System for California (ASSIST) (<http://assist.org/>). The upper branch of English consists of courses equivalent to second year English courses.

Our goal was to include students from all levels of English in a proportion that represented the enrollments across the district. We chose the Spring 2000 semester to provide the data that would most closely predict enrollments during Spring 2001. The research team at LACCD provided helpful crosstab analyses of the English





and ESL enrollments of Spring 2000, both districtwide and on a per campus basis.

In order to represent those students who do not enroll in English courses, the sampling plan also included a group of vocational courses as well as specific transfer level courses such as Psychology 101, Chemistry, and History.

The questionnaire data was coupled with institutional records, such as enrollment files (transcript data), to provide a rich source of information. In 2002, the TRUCCS team enriched the data through a follow-up survey to examine these students' experiences longitudinally. Students who completed the TRUCCS baseline survey were mailed or emailed the TRUCCS follow-up survey. The response rate was 21.3%. To further enhance the sample, non-responders were telephoned in 2003 and administered a telephone survey that consisted of a shortened form of the follow-up. These procedures increased the response rate considerably. Further, the project continued to collect transcript information from all TRUCCS students regardless of response to the follow-up survey. A final survey was administered in 2003-04.

Lumina Foundation supported the TRUCCS project from 2003-2006 (Grant 1415), thus allowing the seamless longitudinal analyses to extend for five years.

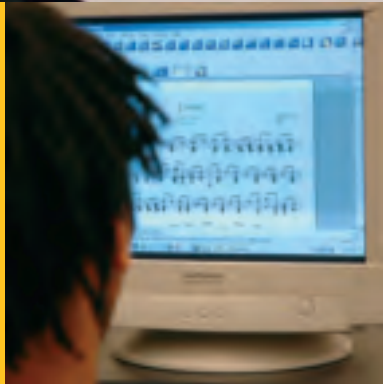
This book presents the synopses of the major articles, research notes, and publications from the TRUCCS study. The full articles and additional information can be accessed at <http://www.truccs.org>.

*The views expressed in this report are those of the authors and do not necessarily reflect those of the supporting organizations.*





TRUCCS *synopses*



## **Transfer between community colleges and four-year colleges**

COMMUNITY COLLEGE TRANSFER RATES are lower than optimal, despite widespread acknowledgement of this problem and the myriad solutions suggested in both research articles and in single-institution efforts. Using the metaphor of the game of baseball, this paper explains how the “all-American game” provides a clear and innovative way to measure, comprehend, and visualize student progress, for those whose stated goal is transfer and bachelor degree attainment, in the uniquely American invention of the community college.

Transcripts of students who indicated an intention to transfer were coded in accordance with the California Transfer Readiness Curriculum (IGETC). Using the baseball paradigm, students advanced one base by completing the following, in any order: 1) English requirement, 2) mathematical concepts requirement, 3) any two: physical and biological sciences; history, constitution, and American ideals; arts and humanities; or social and behavioral sciences, and 4) the last two modules. The study labeled students who had not completed any as “on deck,” calculated the average number of semester enrollments for each of the groups on the diamond, and subsequently compared the sample by gender, ethnicity, age, and native language, revealing statistically significant differences detailed in the full paper.

This paper also analyzed the number and proportion of various types of students successfully completing each type of module, focusing intently on the Mathematics and English modules because they form the backbone of general education requirements, and have been shown to have a significant relationship with other measures of academic success (Secada, 1992), especially for community college students for whom English is not native (Logan, Geltner, & Young, 1998).

The findings indicated that few students make actual progress through the bases and approximately half of the sample did not complete any of the required transfer modules. Many students enter community college at less than the college level of English and Mathematics. While more than half of all students taking less than transfer-level English progress to the next level, far fewer are able to progress in Mathematics. Students who become transfer ready typically did so in approximately 9.5 semesters, providing strong evidence that community colleges are not “two-year” institutions, but rather require successful students to persevere much longer.

The all-American game provides a framework for the establishment of milestones along the transfer pathway. Community colleges could adopt similar procedures to educate students about the pathway and gauge their progress toward transfer.



## **Course shopping in urban community colleges**

THE FIRST DECADE of the 21st century has witnessed nationwide patterns of deep budget cuts resulting in the elimination of four-year and community college programs, the slashing of course offerings, and an ushering in of a new reality that can only be described as “no-frills” (Cohen, 1989; Temple, 1986). This paper examines enrollment behaviors that have never been examined in research literature, despite being widely practiced by students in all types of colleges, and challenges the assumption that “course shopping” is a benign part of college culture.

While previous research has centered on the more general domain of “drop/add” enrollment activities, this study’s classification of course shopping ventures into new conceptual territory, defining, focusing, and elaborating on two main types of behaviors: cyclic shopping, the pattern of dropping a course and adding another in its place, and bulk shopping, signing up for more courses than the student expects to complete with the expectation of dropping some later.

This study includes a four-tier structure of analysis, first analyzing the frequency distribution of various kinds of shoppers: bulk shoppers, who drop more than half, but not all, of the classes before the end of the fourth week of a semester; occasional cyclic shoppers, who drop less than 30%; frequent cyclic shoppers, who drop more than 30%; mixed bag shoppers, who combine bulk

and frequent cyclic shopping behaviors; and non-shoppers. The second tier of analysis consists of chi-square tables to ascertain differences in the distribution of the four types of shoppers by gender, age, and ethnicity, as well as various other factors potentially associated with shopping. The third tier consists of an analysis of cyclic and bulk-shopping behaviors examined by the type of course dropped and the type of course subsequently added. These comparisons are made using both the enrollments and the students as the units of analysis. Finally, the fourth tier consists of a general linear model univariate analysis (GLM), to test for group differences by GPA and success ratios between five groups of students as defined by shopping behavior, using the Dunnett T3 post hoc tests to test the shopping groups against the control “non shoppers” as is the recommended procedure for this type of comparison when variances in groups are not equal (Hochberg & Tamhane, 1987).

Results reveal that course shopping occurs in a significant minority of the enrollments examined. While occasional drop and add activity characterizes about a quarter of the students, only 15% of the students practice bulk or frequent cyclic shopping. Bulk and frequent cyclic shopping are broadly distributed across the student population. While there are small correlations of these behaviors with gender, the number of hours worked, and high school grades, these associations are minor.



Comparing sectors of the curriculum, math courses are more likely to be dropped than English courses. Occasional course shopping is not associated with lower academic performance, but frequent cyclic shoppers are less likely to have strong grade point averages and a successful rate of course completion.

The paper provides suggestions that may inexpensively and easily aid students to better understand the courses in which they enroll. A simple posting on the Internet of all course syllabi coupled with student contact when a student drops a course may increase student success. Finally, community colleges may investigate more overt types of procedures to stem course shopping. A “three strikes” rule in which more than three cycles of cyclic shopping raises a red flag, or a limit on the number of drops and adds after the first day of class, could be established. Proactive measures to lessen the need for shopping appear to be warranted for the success of students and for the effective application of college resources.





*The positive commandments*

## **Ten ways community colleges help students succeed**

**C**RITICISMS LEVELED AT community colleges include complaints of grade inflation, low transfer and retention rates, and accusations regarding the reliance upon unqualified staff to teach basic skills. This paper offers findings rendered in the form of “positive commandments” from data collected through focus groups with students, faculty, and administrators from the nine Los Angeles campuses during the fall semester of 2001.



*The negative commandments*

## **Ten ways community colleges hinder student success**

**T**HE COMMUNITY COLLEGE is an American educational success story. Through open-door admissions policies, community colleges admit and then remediate the underprepared, provide training for those in need of vocational or technical skills, and offer all curricula at varied times on weekdays and weekends in order to provide convenient access to those with work or family constraints that prevent attendance under more traditional circumstances.

This sister paper to the “Positive Commandments” takes the opposite approach, highlighting ten negative operating principles found to be consistent among the focus group interviews conducted. Taken together, the lists of positive and negative “commandments” form the basis of ongoing research designed to illustrate the duality of institutional management.



## **Transcript analysis as a tool to understand community college student academic behaviors**

DEBATE REMAINS STRONG not only about the overall success of community college students, but also about how to measure student progress and outcomes. Transcript analysis is a blanket term for a group of procedures that collectively uses student records to document and understand the complex academic behaviors of community college students. Transcripts—the records of student activities that include enrollments, course drops, and grades—are important, yet often ignored, documents that tell of student successes as well as instances of non-success.

This study, divided into three parts, begins by presenting “transcript stories,” qualitative individual cases that provide the equivalent of the voices of individual students. Each transcript snippet provides a glimpse of patterns found in many student course-taking patterns and provides material for further discussion. The second part of the analysis introduces the method of “group parsing,” the grouping of students into manageable seg-

ments matched on particular qualities, which provides the means of organizing an overwhelming amount of data into meaningful and homogeneous segments, understandable within the context of the demographics of the particular group. Lastly, this study provides comparisons between the groups to better understand the differences and similarities in types of community college students in the study’s district.

Findings indicate a need to monitor and respond to patterns of student behaviors that may be less likely to produce positive outcomes. This paper provides aspects of transcript analysis, each with a differing purpose and level of complexity, that assert the importance and usefulness of transcript analysis as a powerful medium to study and isolate student academic behaviors.



## **How to define retention**

PERHAPS THE TWO most vexing measurement issues in higher education research are how to obtain true transfer rates from community colleges to four-year universities and the correct formula for the measure of college student retention, regardless of institutional type. Measuring college student retention is complicated, confusing, and context dependent. Higher education researchers will likely never reach consensus on the “correct” or “best” way to measure this important outcome. The purpose of this paper is to thoroughly review the associated problems of retention, to examine the methods used to calculate values, and to ultimately recommend policy to reach a national consensus.

Single measures of retention do not tell the whole story of student persistence. To fully understand an institution’s rate of student success, multiple indicators should be calculated and reported. At a minimum, institutions should regularly report institutional persistence, transfer rates (both of the proportion of students who transfer to other institutions as well as the proportion that transfer in from other institutions), and course completion ratios.

The paper recommends that a new measure of pure institutional retention that includes part-time students, continuing students, transfer students, advanced students, and those that begin enrollment at times other than with the fall cohort be reported. The paper also includes suggested annual formulas for degree-seeking student retention, as well as system persistence formulas. Persistence by major may be evaluated for most disciplines thus providing a retention measure of the students declaring their initial interest areas.

Two final equations complete the picture of student retention: successful course completion ratios and graduation rates. Successful course completion ratios can be calculated globally (all courses in the college/university) and within departments to provide a final and fine-tuned measure of retention using the formula provided earlier in the paper. Graduation rates provide a measure of retention along with a measure of progress.

This paper encourages colleges and universities to calculate and disseminate multiple measures of retention. Moreover, findings suggest the benefits of constructing a national tracking system that includes all colleges and universities, including accredited for-profits, to track student progress. Although such a system would be expensive, the importance of this project speaks loudly for its necessity.



## **Using Web surveys to reach community college students**

AS ONLINE SURVEYS continue to capture the attention of institutional researchers, questions about this new medium of data collection invariably surface. Fueled by debates surrounding the use of electronic data collection, this study examines response rates, and response vs. non-response biases, from the original TRUCCS participants. While some students received the TRUCCS follow-up survey as a hardcopy through the traditional mail, others, who indicated a valid email address in the original survey, were sent a link to an Internet-hosted version. The study investigates the impact of different modes of survey administration on student response.

Using survey response as the study's dependent variable, the methodology includes over 20 independent variables in a stepwise logistic regression model including race/ethnicity, sex, age, average income, hours per week of work, length of commuting time, English speaking ability, academic involvement, computer ownership, number of other colleges/universities attended, and degree aspirations. This study also uses descriptive analyses and independent-samples T-Tests to analyze differences in response rates by the type of survey administered (either electronic or paper).

Response rates to the electronic survey were found to be higher than those for the paper survey regardless of the race or gender of respondent: 31.5% (electronic) versus 15.7% (paper), respectively. Higher age and better high school grades significantly predicted increased rates of survey response

for both the electronic and paper surveys.

However, among respondents to the electronic survey, Caucasian females displayed higher rates of response than other participants. Response rates for Mexican Americans were also significantly higher among those who received an electronic survey than those who received a paper survey. In addition, electronic respondents were more likely to be employed, unmarried, and transfer-seeking. In contrast, African American, Mexican American, and Latino/a students were less likely to provide accurate email contact information and thus were disproportionately excluded from receiving electronic surveys.

Results indicate little difference in student response to the items in the electronic and paper surveys, suggesting that if both means of data collection are used in a study, the data may be aggregated for analysis. The study also suggests that online survey methodologies may be a more effective mode of reaching community college students than paper surveys sent via standard mail, substantiating the benefit of collecting multiple forms of contact information in an initial questionnaire or interview.



## **Transfer Center stories**

THE MISSION STATEMENTS of many community colleges include the transfer function—allowing students to begin college at the two-year institution to be followed by transfer to a four-year college or university. Despite an emphasis on transfer by many community colleges, transfer rates remain problematically low. To help students through the difficult process of transfer, many institutions have developed Transfer Centers: physical locations where students can come to learn more about the transfer process.

This study examines the effectiveness of Transfer Centers in the encouragement, support, and fostering of students on the pathway to four-year colleges and universities. Using a case study approach, the sample for this study are the nine Transfer Centers located on the campuses of the LACCD colleges. The campuses were included based on their participation in the project; presence of a functional Transfer Center; and willingness to participate in interviews, focus groups, and observations. Students were chosen randomly upon the researchers' visits to the Transfer Centers. The only criteria used to qualify selected students to participate in the focus groups was if they had used the Transfer Center services on at least one occasion and were either in the process of, or considering, transfer to a four-year institution. This design allowed the researchers to collect

data in a focus group format on a wide range of students who were from different educational backgrounds, ethnicities, and socioeconomic statuses.

There are definite barriers that limit the potential for transfer for community college students and, as a result, compress the transfer function of community colleges. These barriers are largely related to student limitations within the domains of knowledge, academics and finances. With respect to the institutions, the three domains provide the framework for the presentation of findings, but are mediated by conditions internal or external to the Transfer Center and/or the college.

Overall results indicated that Transfer Centers are low in resources, have multiple needs, and are in need of increased support. Transfer Centers are challenged by the multiplicity of articulation agreements. Each center participates in outreach activities, tours on four-year campuses, and establishing cooperative admissions agreements. With increased support for Transfer Centers comes increased support for students and, ideally, improved rates of transfer from community colleges to four-year colleges and universities.

Are Transfer Centers working? The answer is "yes and no." Yes, these centers are helping students to understand and navigate the path to transfer. But, no, they are not functioning at a



level sufficient to help large numbers of students. The idea of a centrally located center staffed with knowledgeable counselors is meritorious. However, it is imperative for states to find the funding to bolster the centers and make them accessible if the benefits are to be realized. Results suggest that the Community College District utilize these centers in such ways that more students will be aware of their existence and will find opportunities to utilize their services.

Transfer Centers are an opportunity to lead students to success. Students who do not find them have lost an opportunity to make the difficult path from community college to four-year institution if not easy then at least a little less rocky.



## **Remedial mathematics courses among urban community college students**

DESPITE THE FACT that almost a third of entering college freshmen take at least one remedial course, many baccalaureate institutions are attempting to shift all remediation to community colleges. This paper examines classroom performance of students in both remedial and non-remedial mathematics courses in the participating TRUCCS community colleges, proposing a little-examined concept: placement/course level match and resulting success.

In attempting to characterize the introductory course classrooms of urban community colleges, this paper proposes a distinction between fragmentary and full cohorts, especially important when studying students in remedial and regular mathematics courses. Fragmentary cohorts are created when full cohorts of students take competing paths and thus become divided. Introductory course classrooms are comprised of a set of fragmentary cohorts—students entering from various paths. A fragmentary cohort sample design can reduce the chance of under- and overestimating course success rates, based on perceived difficulty with the courses by departed peers.

The paper presents a longitudinal study of the course-taking paths in remedial mathematics in conjunction with student math placement scores, defining course success as completion with a grade of C or better. The study examines three levels of remedial courses, identified in terms of content knowledge, difficulty, and relationship to

four-year colleges. The remedial course levels range from zero, including all basic skills courses, to two, identified as all intermediate courses.

This study found some evidence of the functional success of the system of assessment and remedial courses, including high rates of participation in placement testing among those entering the academic track, a high rate of entry by students into remedial math courses at the level indicated by placement tests, and slightly better rates of success in first remedial math courses for students who enroll at the level suggested by test results. Difficulties faced by students who did not comply with the matriculation system, initially entering a remedial math course at a higher level than recommended by test results, are reflected in their slightly lower success rates in the initial math course.

Results suggest that policymakers should reexamine the math curriculum in secondary schools, and create systems of assessment so that students leave high school with a proficiency in mathematics. The accuracy of the mathematics placement tests in the community colleges may serve as a template for secondary school assessments.



## **Student patterns of multiple enrollments**

EDUCATIONAL ENROLLMENT PATTERNS can be likened to a series of playing cards. For many students the path through college is sequential, orderly, and similar to a hand that progresses from deuce to ace. Other student patterns are jumbled, much like a hand that results from a shuffled deck.

This paper provides empirical evidence of the “jumbled hand” in the multi-institutional enrollments of urban community college students and examines several specific exploratory questions for urban community college students: What are the patterns of enrollment in urban community college campuses? Do factors of social position explain why community college students have patterns of multiple enrollments? What educational experiences explain the varieties of enrollment patterns?

A number of variables were included in the study: attending other community colleges; plans to enroll in college in subsequent semesters; demographics such as wealth, gender, age, employment, number of hours working, and ethnicity; measures of social integration at the community college;

previous academic achievements; and previous course units accumulated at the present campus.

An eclectic mix of enrollment patterns emerged among these community college students, with evidence of multiple attendance patterns: simultaneous enrollments; a variety of attendance at different institutions; and various kinds of lateral, vertical, and reverse transfers. Furthermore, enrollments in more than one institution occurred with almost half of the students. Significantly, multiple enrollment plans more frequently concerned lateral rather than vertical movement.

A variety of societal positions of the students did not appear to be responsible for their attendance at several colleges. The main factor substantially related to, and thus partially explaining, plans for future multiple enrollments was surprising: current enrollment patterns. Even more surprising was the absence of a correlation between accumulated course credits and multiple college plans.



## Community college model of student life and retention

THE TRUE RATES of transfer and student retention of community college students are elastic figures which remain a top issue for debate, but all interested parties have agreed on three basic facts: the rates are too low, policy to better isolate and understand the factors that promote success is sorely needed, and urban community college students bring a unique set of challenges that must be studied in isolation of other types of postsecondary students.

This paper is dedicated to the creation of a fresh perspective on urban community colleges—shunning the application of four-year university definitions, rules, and theories. This study posits that course completion is the appropriate way to conceptualize retention within a community college sample. It utilizes structural equation modeling to test a model, based on both the Fishbein and Ajzen (1975) and Benjamin (1994) models, to explain community college student life and course completion, with the goal of better understanding the relationships between latent and measured constructs and to test causal links between beliefs, intentions, and course completion.

Results clearly demonstrate that student life as a construct mediates the relationship between variables (such as English ability, age, college GPA, and the like) and the ability for persistence (defined as course completion). However, findings also demonstrate that, for a diverse and urban population, proficiency with the English language and obstacles to postsecondary education are dramatically influential in course completion. Policies to assist non-native speakers of English would serve well in urban districts that have high levels of students in this category.

Myriad forces impact success, many of which lie outside of the control of community college faculty and administrators. In turn, subsequent coping efforts by students to persist in college are either bolstered or undermined. Since student life and obstacles are strongly tied, policy to alleviate obstacles appears paramount.



## **Adult students and their “fit” in postsecondary institutions**

ADULT COLLEGE STUDENTS, those older than the traditional age, are included in the mass of postsecondary students listed in the nontraditional category. Just like the proverbial square peg that meets resistance when forced through a round hole, adult students often struggle through systems of higher education that have been shaped to accommodate traditionally aged students.

The metaphor of “square peg” adult students includes friction points at the “four corners” of: access, success, retention, and institutional receptivity. This paper examines these friction points using a cross-sectional look at students during specific age spans, as well as a longitudinal analysis of students who enrolled in courses over long time periods (either contiguously or sporadically). Student enrollments are coded and divided into four categories dependent on the age of the student when s/he took the course: traditional students, 17 to 21 years; young adults, 22 to 30 years; prime timers, 31 to 45 years; and those 46 years and above, last chancers.

*Access:* Institutions measure an individual’s potential as a college student using earlier grade point averages and scores on standardized and placement tests. The results of placement tests indicate poorer performance by older students. However, when comparing the self-reported high school GPA of the same groups of students virtually no difference is found. With respect to differences in student age, traditional measures of ability and suitability may not be appropriate or equitable.

*Success:* To compare students against themselves, the study examines 125 students who had taken courses at the LACCD over at least three age steps. Results indicate success increases with age.

*Retention:* The proportion of courses completed increases with each age step: traditional students complete 61% of courses taken, young adults 66%, prime timers 75%, and last chancers the largest proportion at 77%.

*Institutional Receptivity:* Prime timers appear to be the most time restricted and report the highest levels of family responsibilities. Young adults and prime timers report high levels of job responsibilities. Last chancers report the lowest levels of obstacles in paying for college. Interestingly, no difference exists in getting along with other students, regardless of age step.

While in college, adult students do not achieve academic success at lower levels than traditionally aged students, yet the comparisons of this study provide some insight into policies that may assist adult students in successfully achieving their goals.

## **The role of Latino representation in the success of urban community college students**

THE COMMUNITY COLLEGE has historically functioned as a primary access point to post-secondary education for Latino students, currently the fastest growing ethnic group in both population and proportion. This study explores the role and effect of the level of representation of Latino community college students (those who self-identified as Latino, Chicano, or Hispanic) on academic outcomes using a framework of critical mass on a community college campus. Critical mass, or a significant presence of like individuals, is hypothesized to foster feelings of comfort and familiarity within the education environment.

A variety of measures to quantify success (i.e. course success ratio, cumulative GPA, math and English course completion) combine to create a category referred to as “meta-success,” the study’s dependent variable, derived as the summation of four success segments pertaining to each student. The main independent variable is the Latino representation value (RV) on campus. Other independent variables include students’ ages, attitudes, aspiration, academic integration and English ability. Due to the design and nature of the variables, the relationship between the RV levels of Latino students and faculty and the levels of academic success are analyzed through the method of Ordinal Regression (PLUM), applied separately on a per-campus basis.

Results indicate that as the numbers of Latino students and faculty on campus increase to a critical mass, academic success increases. Higher GPAs and success ratios are found at those campuses that enrolled higher proportions of Latino students. The RV level had a positive relationship with student success and enrollment in transfer/non-remedial courses as well. The level of Latino faculty on campus, which may increase the availability of role models for students and foster a sense of belonging and social integration among students, also had a significant impact on Latino student success.

Results suggest that critical mass is indeed an important predictor for student success in urban, Latino community college students. If community colleges are to serve the communities in which they reside, then the continuing recruitment of students at local high schools and other neighborhood institutions, as well as hiring faculty and staff from the neighborhood, will serve the community and increase the proportion of Latinos to a critical mass which would foster greater Latino student success.

## **If university students are from Mercury, community college students must be from Pluto**

WHILE COMMUNITY COLLEGE students may dramatically differ from their four-year counterparts, as a whole, community college students are not all “cut from the same cloth.” This study creates a contemporary typology to accurately describe, categorize, and generally assist administrators and others to better understand the various types of students attending community colleges. A new conceptual framework is used—patterned after the solar system—to represent the several groups of students.

The great variation among students defies any attempt at a single definition or profile befitting the “typical” community college student. This study includes more than 18,000 students who responded to a LACCD survey from Fall 2000 and creates a typology that categorizes students in terms of ethnicity, gender, age, full-time versus part-time status, and educational goals. The solar system metaphor uses the diversity of students and likens them to the planets that revolve around the college/sun. Seven different groups of community college students are identified as planets from cluster analysis over four variables: students’ minimum math level, intention to transfer, average units per semester, and duration of enrollment.

The paper presents the seven planets: 1) Traditional, 2) Full-Vocs, 3) Transfer-Bound, 4) Transfer-Hopefuls, 5) Industrious, 6) Brief Stints, and 7) Uni-Course. The size of the planet is representative of the proportion of students who are resident within the cluster. The closeness of the orbit is in comparison to the extent that the com-

munity college is an integral part of the students’ lives. Students on planets with closer orbits will likely be able to finish their goals in a shorter time than those who are inhabitants of planets with distant orbits. Important to note is that the planets on which these community college students metaphorically live have orbits that can intersect, thus allowing students to move onto a new planet that better suits them.

Community college students clearly do not conform to the more homogeneous typology of their four-year university counterparts. Administrators and faculty may benefit from the acceptance of academic and aspiration diversity that resides within their institutions; students need and utilize the community college in different ways and the differences do not have to be seen as dissonance, but can be viewed in a harmonious fashion.



## **The role of urban community colleges in educating diverse populations**

MANY COMMUNITY COLLEGE alumni relate stories of life change and new possibilities thanks to the open-door admission policies, specific student services programs, and conveniences of a community college. This paper explores the ways in which the LACCD has assisted students who fall outside of those predicted to “make the grade,” particularly those labeled as minorities. Using both questionnaires and transcript data, this study compares “students of color” and white students in the aggregate, followed by specific reports on Latino/Hispanic students since Latinos constitute the largest minority group (“emerging majority”) in the district and provide a special focus for many of the district’s programs. Qualitative analysis results present findings in four categories: course-taking behaviors, retention issues, transfer readiness, and degree acquisition.

*Course-taking Behaviors:* A measure used in this study for evaluation of continuous enrollment is the continuity index, defined as the number of semesters a student completes divided by the number of semesters possible. White students have an average continuity index of 0.778, while for students of color the proportion is 0.771—not a statistically significant difference. When restricting the sample to Hispanic students, the continuity index rose to 0.797, and remains not statistically different from white students. Another measure

explored is the return rate, the proportion of students returning within a period of time. Using a three-year window, the return rate is 79% for White students, 84.8% for students of color, and 85.4% for Hispanic students.

*Retention Issues:* To quantify retention, the course completion ratio measures the proportion of courses in which students enrolled that they successfully complete. For students remaining past the “add-drop” window, the 73.9% completion rate of white students is noticeably higher than the 66.1% for students of color, a difference of statistical significance. The rate for Hispanic students alone is similar to that of students of color as a whole at 66.9%.

*Transfer Readiness:* Transfer readiness is defined as the completion of course modules as described in California’s Intersegmental General Education Transfer Curriculum (IGETC). The paper provides a detailed snapshot of the progression of all students disaggregated by race.

*Degree Acquisition:* Degree acquisition was not statistically different for white students and students of color. Out of 5,000 students in the sample, 1,487 degrees were awarded to 1,069 students. About 5% of the students earned more than one degree.

To better understand the ways in which LACCD programs have provided special assistance to students, vice-presidents of student services, or their designates, at nine community colleges were interviewed, with data from the interviews organized into categories and coded

(Miles & Huberman, 1993). A theme that threads through the interviews is the importance of special programs in assisting underrepresented groups. Several of the interviews involved discussion of the Puente Program that operated prior to budget cuts on three of the campuses. Several administrators cited the need for more computers and technology. Many lessons can be drawn from this mixed method analysis, not the least of which is the understanding that districts like Los Angeles cannot be compartmentalized solely by race or ethnic identification. “Minority” is a misused and confounding descriptor; all students have special needs and will likely meet with greater success when surrounded by a supportive structure. The lessons of the LACCD can be applied in other community colleges simultaneously experiencing population growth and budget cutbacks.



## **The urban community colleges and educational success among Latino students**

LATINOS ARE THE fastest growing group in the state of California. Despite their large representation, Latinos are less likely to graduate from high school and be eligible to enter universities. The Los Angeles Community College District provides all interested students access to higher education, in accordance with the California Master Plan of 1960, offering lower-division academic instruction for transfer as well as personal development and occupational instruction. The students of the LACCD include many with the following characteristics: questionable immigration status, income below the poverty line, first-generation college students, ethnic minority and extensive need of remediation.

This paper analyzes the data of the 2,461 students who self-identified as Latino/Hispanic, describing several of the special programs for Latino students in the district. Analyses included demographic variables such as gender and immigration status, grade point averages in high school and college, course completion, and enrollment in English courses. Findings show that Latino students do not differ from other students with respect to gender proportions, but do tend to be slightly younger (average age 25 as compared to 28 in the rest of the sample) and to be less likely to have children. Latino students had lower high

school grades, and were less likely to have taken college algebra, trigonometry, pre-calculus, calculus, chemistry, or physics either in high school or while in college. Latino students were also less likely to be enrolled in college-level English. In addition, Latino students were much more likely to be employed full time. Within this sample, 27% of the Latino students reported attending an elementary school in another country. Despite these differences, Latino students generally had the same high aspirations as their Caucasian counterparts.

The LACCD is full of eager students looking forward to academic and occupational successes. As an urban district, the campuses find themselves amidst urban problems and serving many poor, immigrant, and first-generation college students. Additionally, the majority of the students happen to be Latino. The district is aware of the needs of its students and has taken steps to provide activities that will be of special interest to Latino students.



## **Women in non-traditional vocational majors**

WOMEN COMPRISE MORE than half of community college enrollments, yet they remain over-represented in some areas while grossly under-represented in others, forming a pattern similar to the gender segregation found in national occupations. This paper examines the experiences of women in male-dominated careers in an urban community college setting, using both qualitative and quantitative data, through interviews with female students in non-traditional fields along with the analysis of the TRUCCS data from the nine campuses of the Los Angeles Community College District.

Previous research regarding women in male-dominated fields revealed two main issues: tokenism and a culture of masculinity. Because there are so few women in fields such as engineering, the women who choose these professions or courses of study are easily recognizable, both for their accomplishments and their mistakes. Women in nontraditional fields also feel high levels of pressure, as they are frequently involuntarily cast as role models for other women while experiencing loneliness and isolation from male peers. Women are, therefore, expected to conform to a culture of masculinity and may be forced to adopt more masculine ways of acting. Yet this is not always manifested in becoming “just one of the guys”; also commonplace is the marginalization of women in male-dominated fields.

Eight themes, explored in depth within the paper, emerged in the interviews: being a woman in a male-dominated field, faculty-student interactions, student-student interactions, sexual harassment, challenges to expertise, being integrated into the classroom, support structures, and future goals.

Despite the tokenism and the barriers that these women must overcome, results indicated that most were happy with their decisions to pursue non-traditional education and careers. They felt largely comfortable in the classroom and strongly supported by community college administrators and faculty. Additional research should follow these women into the workplace to ascertain how their training prepared them for their non-traditional working roles.

## **California's experience with reverse transfer students**

CALIFORNIA IS A STATE of interesting paradoxes, and this paper relates the state's rich history and experiences with reverse transfer using the analogy of paradoxes. Reverse transfer students can be broadly defined as those students enrolling in a community college with previous credits from a four-year institution (or equivalent). Results reveal that in addition to serving as a gateway to postsecondary education, California community colleges are also becoming intermediate, or even terminal, educational outposts for growing numbers of students.

This paper reviews institutional policy and its effect on reverse transfer within the state of California from a historical perspective. Qualitative data from students supplements the dearth of historical information from the literature, with national data further supporting and explaining the phenomenon of reverse transfer. Included in the discussion are sources that indicated that reverse transfer has been practiced for some time: the historical context of transfer students, California's Master Plan of 1960, Proposition 13, and the differential fee legislation of 1993. Results reveal that many reverse transfer students are not taking courses for frivolous reasons, as once thought, but rather for increased education or for improved work-related skills.

Several of the students interviewed are "reverse diploma" students who returned to the community college to supplement their knowledge, to gain more specific career-oriented training, and to obtain more technology-specific education. A trend is identified for the "summer sessioner" students who supplemented credits or coursework at their regular four-year institution with less expensive, but transferable, courses at the local community college. Finally, foreign diploma holders are also identified as reverse transfer students. Students in this category frequently seek educational opportunities and American credentials because their foreign degrees are not recognized in the United States.

Among the general reverse transfer students, interviews reveal three broad categories in regards to reasons for returning to the community college: financial, emotional, and remedial. Financially, community college is a much more feasible educational alternative for many of California's students because fees remain lower than both the state's public and private institutions. Emotionally, some reverse transfer students report feeling more comfortable at the community college than at a four-year college or university. Interviewees express difficulty with adjusting, homesickness, irresponsibility, and a lack of minority student representation as potential reasons for returning to their community colleges. Finally, some transfer students reportedly return to community colleges because they have difficulty keeping up with the academic pace at their four-year institutions.

Results suggest that a one-way, linear, and vertical progression of transfer can no longer be assumed. As discovered in the qualitative interviews, students are returning to the community college for a variety of reasons. Overall, this paper clearly indicates that education begets education. It is important to acknowledge the growing function of the community college as an intermediate and terminal educational opportunity for students when making policy decisions and budget allotments. A growing need exists for specialized technology education and increased interest in education for social mobility or changing familial patterns. This paper suggests that community colleges will continue to assist in the personal, professional, and emotional transformation of California's students, regardless of previous educational experiences, for years to come.



## Is there a “chilly” climate for female community college faculty?

TWO DECADES AGO Hall and Sandler (1982) coined the phrase “chilly climate” to symbolically represent the pervasive and negative classroom climate reported by females. Subsequently the term has been applied to women’s experiences in postsecondary classrooms as well. Because little attention has been given to the status of female faculty at the community college, this paper focuses specifically on this subgroup.

It is clear that, on average, women faculty spend more time teaching (58% versus 46% for men) and much less time in research (16% versus 27% for men) (Glaxer-Raymo, 1999). However, it is difficult to ascertain if the differences are really due to personal preferences or to the types of postsecondary institutions at which more women work; many women are employed in community colleges. This study aims at identifying any differential standards and/or a chilly climate for female faculty at the community college.

This study employs a multivariate analysis of covariance (MANCOVA) on data from both male and female community college faculty to ascertain the role of gender in the perception of campus climate. These analyses reveal that perceptions of climate among community college faculty do not differ by gender or ethnicity. In fact, the only independent variable with significant differences

by gender and ethnicity is attitudes towards discrimination. Males and Caucasians are statistically more likely to feel that claims of discriminatory practices against women and minorities have been greatly exaggerated. Overall, there exists only a slight gender effect on measures pertaining to the perception of a chilly climate.

Results indicate that the climate for female faculty at the community college may be less chilly than that at the typical four-year institution. These findings are consistent with previous research, which suggested that there is more presence and support of women within the community college (Townsend, 1995).

On the other hand, the analyses in no way indicate that community colleges are havens where female faculty are free from discrimination. Rather, attitudes towards discrimination are the only variable in the study that revealed significant differences between gender and minority status. In addition, although female representation may be greater within the community college, the positions and salaries of women remain lower than their male colleagues (AAUP, 2001). Overall, findings seems to suggest that gender politics may be less chilly at community colleges where equality is a part of the institutional mission.



## Retention of Asian Pacific Americans

DESPITE INCREASES IN the general population of Asian Pacific Americans, the numbers of Asian Pacific American community college students transferring to four-year institutions has not increased proportionately, similar to other minority groups (California Postsecondary Education Commission, 2001). While the persistence rate of Asian students in higher education is high (Peng, 1985; Hsia, 1988), the characteristics of many Asian Pacific American students, particularly those enrolled at community colleges, may not be predictive of persistence in the context of Tinto's (1975, 1987) retention model. This study focuses on identifying the predictors of persistence and retention, and the course-taking patterns of Asian Pacific American students in urban community colleges.

The study is correlational, descriptive, and inferential using responses of all Asian students who participated in TRUCCS: approximately 17% of the sample. Findings suggest a significant relationship between course completion ratios and the predictors—science GPA, social status of occupational goals, perceived obstacles, aspirations, academic integration, English ability, English GPA, and goal orientation—as well as statistically significant differences between various Asian Pacific American ethnic groups.

The results of this study confirm that Asian Pacific Americans are different from other larger or more dominant ethnic groups. Further, significant differences exist within and between the various Asian Pacific American ethnic groups, suggesting that significant information about unique and identifiable ethnic groups is being lost when data is aggregated into larger more generic groupings. Such aggregation may lead to the formulation of conclusions and policies that may not be consistent with the needs and aspirations of Asian Pacific Americans.

## Understanding differences among community college students across varying levels of parental education

FIRST-GENERATION COLLEGE students, those whose parents never attended college, often encounter major barriers in higher education. Some notable barriers include academic difficulties, minority status, lower incomes, problems with social integration, and lack of family support. These combined factors may be negative influences on students' educational aspirations, academic achievement, and academic integration. However, while these barriers have been well documented, the reasons for their existence are less evident.

This study broadens the understanding of the significance of parental education on student achievement. The impact of different levels of parental education are explored for parents who have completed junior high, high school, community college, four-year college, or graduate school. These differing levels of parental education serve as the lens through which the barriers of community college students are explored.

This study uses the method of analysis of variance techniques (ANOVA) to compare differences between students of different parental education levels. In a separate procedure, logistic regression analyses are used to understand how the aspects of the student experience reflected parental education level.

The findings challenge the previously dichotomous perceptions of the impact of parental education and student status—first generation or

not—on success. Rather, results indicate significant differences in the student experience that vary according to the level of parent education. ANOVA results indicate significant income differences across levels of parental education. Results also indicate that proportions of minority students differ significantly across parental education levels. Latinos and Mexican Americans are most likely to come from families in which parents had completed junior high school or less. In contrast, Caucasian students are most likely to have parents who had received some form of graduate education.

First-generation college students are more likely to be Latino or Mexican American, have lower income and lower high school GPAs, have difficulty understanding English, and to feel anxious about entering college. Logistic regression analyses show that student characteristics differ not only across varying levels of parental education, but also within multiple levels, making a distinct pattern difficult to determine.

This study finds significant differences in students' performance in community college when viewed through a lens of parents' level of education. However, it also suggests that these differences vary widely depending on the demographic characteristics and the viewpoints of both the students and their parents.



## **Taking the golden state path to teacher education**

CALIFORNIA IS EXPERIENCING one of the severest shortages of credentialed teachers in its more than 150-year history, a problem now disproportionately present in urban and low-performing schools serving poor and minority students. A review of the qualitative exploration of the Community College Teacher Reading Development Partnerships (TRDP) sheds light on the current situation as seen through nine community colleges in the state of California at which teachers, administrators, and students in teacher-preparation programs were observed and interviewed. The ability of community colleges to bring the teaching profession to many who would not otherwise consider it a viable professional opportunity reinforces the importance of the community college as a valuable resource for teacher preparation.





## The role of friendship in community college students' decisions to persist, transfer, or withdraw

THE RELEVANCE OF friendship to students' goals and choices—academic or otherwise—seems obvious. This paper questions and explores the relevancy of friendship for community college students, for whom friendship and college going might be less closely tied by virtue of the non-residential campus setting and/or the nontraditional characteristics of the students themselves. Thus the research question for this study is “How does friendship affect the process by which community college students map their academic lives?”

The purpose of this study is to examine one piece of the retention puzzle: the effect of friendship on the likelihood of re-enrollment, transfer, or withdrawal in the community college. The descriptive and multivariate analyses conducted within this study allows the paper to assess if and how friendship matters to those issues in conjunction with students' demographic or background characteristics (sex, race, age) and college experiences (interaction with faculty members) that also might influence enrollment patterns.

Three dependent variables are descriptively analyzed for frequency and correlations: 1) plans to re-enroll at the current institution next semester, 2) plans to enroll at another institution the next semester, and 3) enrollment status at any institution at the time of follow-up. Four measures of friendship are also examined: 1) reason for

attending the current institution, namely “my friends are attending here”; 2) number of close personal friends attending the current college; 3) the closest friends' opinions of the current college; and 4) plans to develop close new relationships with other students. Analysis of these variables is followed by a series of logistic regression analyses. The study employs a set of demographic and behavioral control variables: sex, race/ethnicity, native language, and age; income level, receipt of scholarship or grant, parents' education, and marital status; degree aspirations, length of commute to campus, employment status, and number of other colleges or universities attended in the past; and average grades in high school. A composite measure of perceived obstacles to education is tested, as are two factors that assessed respondents' academic involvement with faculty members and other students at their current institutions.

Results indicate that the majority of survey respondents do not attend their current institutions because their friends are attending, nor do many have close friends on campus. Few students plan to develop close relationships with their peers on campus. The only variable to significantly predict reenrollment is close friends' opinion of the student's current college. Similarly, close friends' opinion of college decreases the odds of plans to enroll elsewhere. A good number of students report that their closest friends would rate their college as “average,” “good,” or “excellent.” Few significant conditional effects are noted.



On an immediate and practical level, these findings are instructive. First, if friends' ratings of an institution matter to students' enrollment plans, community colleges might find it advantageous to market themselves not only to potential community college students, but also to a wider audience. To retain students and help them accomplish their educational goals, community colleges should think about image on a broader scale. This might mean distributing college advertisements, brochures, and literature in multiple ways to multiple sectors, not simply to those that seem most community college friendly. Second, these findings suggest that faculty and staff should not underestimate the expectations or needs of different types of students when designing programs to facilitate social interactions on campus. Third, colleges may want to ask how friendship can advance their students' educational goals, given the large body of literature on the many benefits of friendship.



## *In the words of* **TRUCCS** *students*

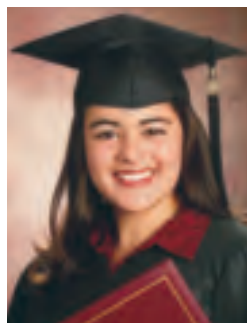


"I began working at TRUCCS the summer before my senior year. While I had held other jobs and internships prior to this, I desired a position that would provide me with an academic challenge and educational

stimulation. Although I was initially hired as a work-study and assistant to the administrative coordinator of the department, I was encouraged to use my skills, and in doing so I was able to acquire new ones.

I worked closely with Dr. Hagedorn and many of the doctoral students, assisting with research, data analysis, and even publication submissions and revisions. The TRUCCS office was not simply an office or place of employment for me, but instead a classroom — a place of learning and higher education. I am honored to have been part of such an influential project. As a previous student of a community college, I am aware of the weaknesses and inconsistencies that exist within its educational system; it is clear that the efforts of professionals such as Dr. Hagedorn and her research team are key to the effectiveness of these colleges and ultimately the growth and success of their students."

— ALEXIS ASATOURIAN, *USC Senior and TRUCCS employee*



"My involvement with TRUCCS started in the summer of 2003 as an outcome of my participation in the Ronald E. McNair Post-baccalaureate Achievement Program. The McNair program is

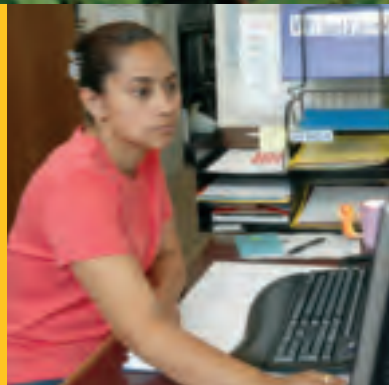
designed to provide underrepresented students with the opportunity to work with a mentor and to acquire research experience before initiating graduate school. After intensive research, I found that Dr. Linda Serra Hagedorn was the perfect candidate to be my mentor since our research interests were similar. I became interested in TRUCCS research because I am a transfer student myself, and I wanted to explore the different programs that exist to support transfer students. Furthermore, as part of the TRUCCS program I was able to develop a variety of skills essential for graduate school. I learned to be organized, consistent in my data collection, and how to use SPSS to analyze the data collected. Thanks to my participation in TRUCCS, I now feel that I am well prepared to start a graduate program as I am familiar with the process that research entails."

— KARINA CABRAL, *USC Senior and TRUCCS employee*



**TRUCCS** *appendix*





## *The language of* TRUCCS

### **Academic Diversity**

The measure of the heterogeneity and variance of the student body of a community college. The nature of the “open door” admission process creates a vast difference in the abilities, motivations, and ultimate successes of students.

### **Age (categories of students by age)**

*Advanced Pre-College:* concurrent high school (and lower) students, less than 17 years of age, (also see dual enrollers)

*Traditional Age:* high school graduation to age 21

*Young Adults:* 22 to 30 years

*Prime Timers:* 31 to 45 years

*Last Chancers:* 45 years and above

### **Attainment Rate**

The proportion of students who have obtained a formal credential or license, transferred to a four-year institution, or graduated with an Associate’s degree.

### **Backtracking**

Taking a course that is a pre-requisite for a course the student has already taken. For example, taking a remedial math course after passing a transfer level course.

### **Bulk Shopping**

The act of enrolling in many courses with the a priori intention of dropping those courses that do not meet the student’s criteria after attending one or more sessions of the course. Bulk shopping is not followed by enrollment in other courses (Hagedorn, Maxwell, Cypers, & Moon, 2003). A true bulk shopper is defined as a student who enrolls in courses only once in a semester, but drops half or more of the classes early in the semester (during the add/drop season).

### **Cohort**

A broad term indicating a group of students who enter the community college at a given time. Cohorts can be mixed or pure. A pure cohort consists of students who are first-time college attenders. A mixed cohort consists of all students, regardless of educational history, enrolling for the first time at a specific campus at a given semester or quarter.

### **Completion Ratio**

The proportion or percentage of courses that a student completes as compared to the number of courses in which the student enrolls. Mathematically, calculated as:

$$\frac{\text{\# courses with the grade of A, B, C, D, F, P, or NP}}{\text{\# of courses of enrollment}}$$



### **Concurrently Enrolled Transfer**

“Student who enrolls in both a community college and a four-year college at the same time” (Hagedorn & Castro, 1999, p. 16). Generally, a concurrently enrolled transfer will use the credits earned at the community college to augment courses at the four-year institution.

### **Continuity Index**

A measure of the extent of continuous enrollment or lack of stopout. A student continuously enrolled (generally excluding the summer semester or quarter) will have an index of 1. As an example, consider the student who first enrolled in a college in Spring 2001, and subsequently signed up for courses only during Fall 2002 and Fall 2003 (a total of 3 semesters). Calculated in the fall of 2003, this student would have a calculated continuity index of .5 (3 semesters/6 semesters of time). Note that the semester count begins with the first semester of enrollment and ends when the student graduates, transfers, or otherwise completes his or her goal.

### **Core Subject Delay**

An enrollment pattern in which students delay enrollment in core (basic) subjects, such as math and English. Core subject delay (CSD) is measured as the cumulative number of credits of enrollment in semesters (or quarters) prior to first enrollment in a core math or English course.

### **Course Shopping**

Student behaviors exemplified when enrolling and dropping courses in a search for the correct or appropriate courses. Shopping behaviors may be costly to the institution as well as the student, and may occur more frequently when students do not receive adequate academic advising. Different types of shopping behavior include bulk, cyclic, and mixed bag.

### **Cyclic Shopping**

Enrolling and dropping courses in a cyclic pattern “shopping” for the ideal fit. Operationally defined as the act of dropping a course, and on the same day, or 1 day later, adding another course. A true cyclic shopper is defined as a student who performs the cyclic shopping pattern in 30% or more of classes.

### **Developmental Climb**

The progression through the various levels of developmental/remedial courses to transfer level. For example, a student in remedial mathematics may need to take 2 courses (such as, Introduction to Algebra and Intermediate Algebra) before enrollment into a transfer level course (for example, College Algebra). The grades earned, the number of times each course was attempted, and the number of semesters between each step are all included measures when studying the developmental climb.

### **Disenrolled**

A category of students who leave the college without the apparent achievement of goals. An example of a disenrolled student is one who proclaimed the goal of earning a certificate, but who stopped attending after only a few courses.



**Drift**

An activity performed by some community college students wherein they sample classes and exhaust financial aid before declaring a major or choosing an occupational certificate program. Drift is a negative predictor of persistence and retention.

**Dual enroller**

A student attending more than one institution at any given time. Dual enrollers may be attending high school, another community college, a four-year institution, or a trade or adult school while simultaneously attending a community college. Dual enrollers may also be concurrently enrolled transfers.

**Efficiency (in remediation)**

Efficiency as measured by the following:

- a. Number of Drops: the number of times that students attempt a remedial level but drop it prior to successful completion.
- b. Time: semester count from first remedial enrollment to completion of college level work.
- c. Backtracking (see glossary entry): when a student enrolled in a less than college level course subsequently enrolls for a lower rather than higher level course.

**Foreign Diploma**

“Student with a degree from a non-U.S. institution who enrolls in a community college” (Hagedorn & Castro, 1999, p. 16).

**Group Parsing**

A research method involving dividing data pertaining to homogeneous groups of community college students in order to study specific phenomenon.

**Institutional Receptivity**

The commitment of the institution to assist students. Institutional receptivity includes the institutional willingness to offer courses at times convenient to students, to provide childcare services, to provide a safe environment, and to provide those support services that the community requires to successfully complete academic programs. Institutional receptivity includes efforts to work with community organizations and others to initiate programs that alleviate student barriers to postsecondary study.

**Intensity Ratio**

Intensity ratios measure the concentration in a particular course type. For example, English intensity may be calculated as:

$$\frac{\text{\# of English Courses}}{\text{Total \# of courses.}}$$

Intensity ratios can be calculated for transfer level courses, math courses, or any other discipline or interest.

**Late Enrollment Index**

The ratio of courses in which a student enrolls AFTER the first day of class to the total number of courses in which the student enrolled. Note that late enrollments may be related to student “shop-ping” behaviors.



**Mixed Bag Shopping**

The act of combining both bulk and cyclic shopping. Mixed bag shoppers are students who are unsure of which courses are best for them and thus take actions that may be detrimental to both themselves and other students in regard to their enrollment behaviors. Mixed bag shoppers are defined as those students who bulk shopped at least one semester and are also true cyclic shoppers.

**Participation Ratio (or Index)**

Aggregate measure of the proportion of students enrolled in any level or course type. Calculated as:

$$\frac{\text{\# of enrolled students}}{\text{\# of students in appropriate population}}$$

For example a participation ratio for mathematics would be the proportion of students ever taking a math course in a given time period.

**Remediation Levels**

- 0 = True Remedial: at least three course levels from a transfer-level class.
- 1 = Basic: two course levels from a transfer-level class.
- 2 = Intermediate: one level from transfer-level.
- 3 = College Level: transferable credit.

**Return Rate**

The one-semester return rate is the proportion of a cohort of students who return within a given time period (usually two years) who enroll for another semester of coursework.

**Routes**

Routes are the paths that students take subsequent to their placement tests (usually in mathematics and English). Students who enroll in a higher level course than the placement test indicates are “high routers,” those who enroll in a lower course are “low routers,” while those who enroll in a matched course are “matched routers.”

**Success Ratio**

The proportion or percentage of courses that a student successfully completes as compared to the number of courses in which the student enrolls. Mathematically, calculated as:

$$\frac{\text{\# of courses with the grade of A, B, C, or P}}{\text{\# of courses of enrollment}}$$

**Transcript Story**

A student enrollment case study consisting of the courses in which a student enrolls, successfully completes, or drops. The transcript story begins at the semester that the student first enrolls, and continues longitudinally through the student’s enrollment despite any semesters of no enrollment activities.



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