STAR COMMITTEE RECOMMENDATIONS

IMPROVING RETENTION AND ATTRITION OF UNDERGRADUATE STUDENTS AT UC DAVIS

March 2008
I. INTRODUCTION

Committee Charge

The charge of the STAR Committee is to examine key factors contributing to student persistence at UC Davis, and to recommend strategies that will positively impact the rate at which students are retained and persist towards a degree (preferably in four years), and graduate. The core of the committee’s work will focus on retaining both graduate and undergraduate students at the university, and assisting them with successful degree completion.

Committee members – 2006/2007

Ward Stewart, (Chair) Director, Learning Skills Center
Alfredo Arredondo, Student Assistant to the Chancellor
Steven Baissa, Director, Cross Cultural Center
Arnette Bates, Director, Educational Opportunity Program
Lora Jo Bossio (ex officio), Interim Assistant Vice Chancellor, Student Affairs
Gillian Butler, Director, Student Affairs Research and Information
Shirley Chiang, Chair, Physics Department
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Thomas Famula, Chair, Undergraduate Council (07-08)
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Katy Maloney, Interim Director, Financial Aid
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Dan Potter, Chair, Undergraduate Council (06-07)
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J. Leon Washington (ex officio), Assistant Vice Chancellor, Student Affairs
Fred Wood (ex officio), Interim Vice Provost Undergraduate Studies

Committee Participants - 2007

Toby Beauchamp, Graduate Studies
Robert Davis, Financial Aid
Vickie Gomez, Office of Campus Community Relations
Mayra Llamas, Student Recruitment and Retention Center
Nina Massouni, Cross Cultural Center
Sabrina Sewell, Student Affairs Research and Information
Stephanie Tan, Student Recruitment and Retention Center

Minutes by Rosemary Renteria & Carla Lacey
II. EXECUTIVE SUMMARY

In spring of 2006 the Vice Chancellor for Student Affairs appointed a committee, based on discussions with the Provost, to investigate factors which contribute to student persistence and recommend strategies that will increase students’ retention and graduation rates. After a discussion of the breadth and complexity of the issues related to student retention at all levels, the members decided to limit initial efforts to the retention of undergraduate students.

The committee began its work by requesting that SARI look into the current status of student retention on the UC Davis campus which resulted in a report on the retention and attrition of undergraduates. The committee also examined past SARI reports including a 1981 survey of EOP and SAA undergraduates who left the University without a degree. The committee also asked SARI to survey current students and determine what factors might lead to attrition.

First, on the positive side, the committee found that the overall six-year graduation rate of UC Davis undergraduates compares favorably with those of comparable institutions. Also, the gap between the overall graduation rate of all UC Davis undergraduates and the rate for underrepresented students as a group, as well as the gap between the overall undergraduate graduation rate and each of the underrepresented groups on this campus, were lower than the gaps of at least half of the selected institutions.

Most attrition (12%) takes place during the first two years students are on campus; however, the committee found that certain groups (Native American males and females, African American males, students from outside California, Latino/Hispanic males, EOP students, low-income students, Latino/Hispanic females, students in the Division of Mathematics and Physical Science, and students from Southern California) had attrition rates ranging from 3% to 10% above the overall undergraduate average.

The committee asked SARI to survey students to determine the major reasons students thought they might not graduate from UC Davis. The most common reasons provided were academic difficulty, lack of mentorship and proper guidance, plan to transfer to a four-year institution, financial difficulty, not feeling like a part of the campus community, personal reasons, and being socially uncomfortable at UC Davis.

The members of the committee decided to make recommendations within the framework of a retention model which includes: better connecting students to the University, creating a campus-wide early detection system, implementing follow-up procedures for students in academic difficulty, and designing an exit procedure for students intending to leave the University.
A. CONNECTING Students to the University

1. All new students should complete a questionnaire which surveys their interests. The results should be used to connect students with groups or activities which are congruent with those interests. Commercially developed surveys are available or the campus might develop its own.

2. One or more mentorship programs should be created. As outlined in APM-210-1d, each faculty member is encouraged and given recognition for “contributions that promote diversity and equal opportunity”. While these contributions can take many forms, mentoring of students is specifically mentioned.

3. All new students should be assigned an advisor upon matriculation especially individuals who come to the University as “exploratory” or “undeclared”. Perhaps staff in the deans’ offices can fill this role initially.

4. The freshman seminar program should be expanded to sophomores, juniors, seniors, transfers, and the seminar “Navigating the Research University” should be available to all new students.

5. On campus housing should be available to all new students, both freshmen and transfers.

6. In order to improve campus climate the Vice Provost for Academic Personnel should be encouraged to develop a comprehensive diversity training program for faculty that could become a required part of their promotion packages.

7. Student Affairs professionals should participate in diversity awareness training programs.

8. Strengthen the pipeline of students who participate in pre-college preparatory programs by connecting them with campus resources when they first come to campus.

9. Create a commuter center and a transfer center.

B. EARLY DETECTION SYSTEM

1. Identify at-risk students including the groups with the highest two year attrition rates. The academic progress of these students should be monitored closely and followed by appropriate intervention strategies.

2. Teaching assistant training should be expanded to include cultural awareness and sensitivity to the needs of students.

3. Teaching assistants should make special efforts to assist students who perform poorly on midterms, especially the first one each term.

4. Teaching faculty, staff, and students should be well versed in the campus resources to facilitate proper referrals to services.

5. New students should complete a questionnaire which surveys their concept of their academic abilities and likelihood of success thereby identifying potentially high risk students.
C. Follow-up procedures for STUDENTS IN ACADEMIC DIFFICULTY

1. Implement a fully automated, timely, campus-wide electronic system for identifying students earning D or F grades.
2. Deans’ offices should make contracts with students in academic difficulty which require students to use the appropriate support services.
3. Degree Navigator’s reliability issues need to be resolved so it can be a valuable tool to check students’ progress and can be used by staff to communicate among themselves about individual students.

D. EXIT PROCEDURE for students intending to leave the University

1. Create and publicize widely an exit procedure for students intending to leave the University which requires students to visit Student Accounting, University Registrar’s Office, and a yet to be determined appropriate office in which they participate in an exit interview one of whose purposes is to assist students with any difficulties which may be hampering their ability to persist.

E. General Recommendations

1. After students submit their Statements of Intent to Register, identify a group (the size of which will depend upon available resources) of students belonging to the at-risk groups identified in this report. Support their participation in STEP and provide them with advising, mentoring, tutoring, cultural events, and other services like those provided by the TRiO Scholars Program.
2. Efforts to retain students should be focused on times when students are most likely to leave the University such as during their first and second years.
3. The Committee recommends that academic department personnel review the list of best practices contained in this report and implement those practices which they deem feasible given their department’s budgetary and personnel limitations.
4. All departments should strive to be creative in thinking of ways to increase the likelihood of success of low-income/high risk students.
5. The data show that Fall 2006 there was a marked increase in the percentages of students on probation or subject to dismissal especially for high-risk groups including low-income and EOP students. The committee recommends that campus administrators carefully study the effects of policies affecting student retention. Otherwise, the attrition rates of the most at-risk groups will increase and with it the diversity of the campus will decrease as the campus climate deteriorates.
6. Participation in the exit procedure should be a campus expectation of students intending to leave the University. One of the main purposes of the exit procedure is to help students solve problems which might be interfering with their success.
III. COMMITTEE FINDINGS

UC Davis Compared With Other Institutions

The Education Trust is a national nonprofit that works to promote the high academic achievement of all students. The Trust created an interactive Web tool which provides access to information drawn from the nation’s most comprehensive database of institution graduation rates, the U.S. Department of Education’s Graduation Rate Survey. What follows are the six year graduation rates of UC Davis and fifteen of the most similar institutions. The comparison group does not include all University of California campuses.

The first table in Appendix A has the institutions ranked by six year graduation rate of 1999 entering cohorts with UC Davis (80.1%) second behind UC San Diego (84.6) and far ahead of the sixteenth school, SUNY at Buffalo (58.8%).

The second table in Appendix A ranks the institutions by the gap between the overall graduation rate and the graduation rate of underrepresented students. The graduation rates of underrepresented students are of particular interest because their two year attrition rates are among the highest of all the groupings (see figure 2). In this instance, UC Davis (-4.6%; overall graduation rate is 4.6% higher than the graduation rate of underrepresented students) is third behind UC Santa Barbara (-3.3%) and UC Irvine (-4.2%) with UC San Diego fifth at -7%. Again, SUNY at Buffalo ranks sixteenth with a -17.7% gap.

The third table ranks the institutions by the gap between the overall graduation rate and the graduation rate of African American students. UC Davis (-1.2%) is second behind UC Irvine (-0.5%) with University of Washington-Seattle last at -22.5%.

The fourth table ranks the institutions by the gap between the overall graduation rate and the graduation rate of Latino students. UC Davis (-4.5%) ranks fourth in this comparison and University of Iowa is sixteenth at -12.6%.

The fifth table ranks the institutions by the gap between the overall graduation rate and the graduation rate of Native American students. In this comparison, UC Irvine is first with its Native American graduation rate 10% above the overall rate while UC Davis is seventh with a graduation rate 20.1% lower than the overall rate.

The sixth table ranks the institutions by the gap between the overall graduation rate and the graduation rate of Asian students. Of the sixteen universities, UC Davis ranks eleventh with Asian students graduating at a rate 0.7% lower than the general student body.

The seventh table ranks the institutions by the difference between the 2005 and 1997 graduation rates. The University of Connecticut ranked first with a 10.7% increase in
overall graduation rate while UC Davis was sixth with an increase of 6.4%. SUNY at Buffalo was last with an increase of 0.6%.

The last table in Appendix A shows that UC Davis ranks fourth among UC campuses in overall graduation rate. In addition, graduation rates at UC campuses compare favorably with the graduation rates of the institutions in the Education Trust comparison group.

In general, the graduation rates of underrepresented students do not vary greatly from the overall undergraduate graduation rate except for Native American students. It should be noted that this group of students is small and its graduation rates vary greatly as can be seen in Appendix B, Figure 16, where Native American graduation rates vary from 55% to 80% during a six year period.
A Closer Look at UC Davis

Retention and Attrition of Undergraduates at UC Davis, 1995 to 2004

SARI prepared Report #374, Retention and Attrition of Undergraduates at UC Davis, 1995 to 2004, (see Appendix B), in response to a request by the STAR Committee to provide information on the current status of student retention and graduation.

Figure 1 (below and in Appendix B), Quarter by Quarter Persistence for Starting Class of 1999, provides a graphic representation of the percentages of freshman and transfer students over a seven year period who were enrolled, graduated, left campus (attrition), or were in limbo. The latter group is indicated in gray at the top of the figure and accounts for students who leave the University and may return or ultimately never return, but are eventually placed in one of the three other categories. What is clear from figure 1 is that for the students entering the University in 1999 UC Davis loses 12% during the first two years and 17% after seven years. Thus, most of the attrition occurs during the first two years of students’ academic careers. Also, not surprisingly, the percentage of students graduating increases significantly during the fourth and fifth years.

Figure 2 (below and in Appendix B) shows the ranking of 2-year attrition for those students who started in the Fall of 1995 to 2002. For this larger cohort than the one considered in figure 1, the average two-year attrition for all groups is also 12%. Native American females and males (22% and 20%, respectively) left campus at the highest rates followed by African American males (17%), non-California students and Latino/Hispanic males (both at 17%), and EOP students (16%). They were followed by
students with no expected family contribution, Latino/Hispanic females, students in the Division of Mathematics and Physical Science in the College of L&S, and Southern California males and females (all 15%). These groups are clearly high risk and should be considered carefully in any retention strategies. Note that the percentages given are averages for each of the groups and individuals who fall in more than one of these groups may be at greater risk. For instance, a Native American EOP female student from Southern California who wishes to study mathematics or physical science might be at extremely high risk.
### Figure 2

<table>
<thead>
<tr>
<th>Groups</th>
<th>Category</th>
<th>Total Count of New Students 1995 to 2-Year Attrition</th>
<th>2-Year Attrition Rate</th>
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<tbody>
<tr>
<td>Native American Female</td>
<td></td>
<td>269</td>
<td>59</td>
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<tr>
<td>Native American Male</td>
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<td>161</td>
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<td>African American Male</td>
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<td>475</td>
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<td>US less CA Regions</td>
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<td>1,826</td>
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<td>4,406</td>
<td>698</td>
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<td>$0 EFC</td>
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<td>6,337</td>
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<td>2,617</td>
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<td>LS: Division of Mathematics &amp; Physical Science</td>
<td>Regions</td>
<td>6,340</td>
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<td>Southern California Male</td>
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<td>1,470</td>
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<tr>
<td>Other Asian Female</td>
<td>Asian Subgroup</td>
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<td>100</td>
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<tr>
<td>African American Female</td>
<td></td>
<td>7,578</td>
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<td>Northern California Male</td>
<td>Regions</td>
<td>2,989</td>
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<td>EOP Applied but denied</td>
<td>EOP Status</td>
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<td>Household Income</td>
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<td>San Joaquin Valley</td>
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<td>Unknown Male</td>
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<td>1,426</td>
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<td>Central Coast</td>
<td>Regions</td>
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<td>LS: Division of Humanities, Arts &amp; Cultural Studies</td>
<td>Division First Term</td>
<td>4,219</td>
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<td>Vietnamese Male</td>
<td>Asian Subgroup</td>
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<td>272</td>
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<tr>
<td>Total</td>
<td>Male</td>
<td>19,653</td>
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<tr>
<td>White Male</td>
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<td>8,460</td>
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<td>$1 to $4,999 EFC</td>
<td>Financial Aid</td>
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<td>College of Agricultural &amp; Environmental Sciences</td>
<td>Division First Term</td>
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<tr>
<td>Total</td>
<td>Total</td>
<td>44,791</td>
<td>5,141</td>
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<tr>
<td>Division of Biological Sciences</td>
<td>Division First Term</td>
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<td>HH Income $40k to $80k</td>
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<td>International (N, NI)</td>
<td>Regions</td>
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<td>Korean</td>
<td>Asian Subgroup</td>
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<td>LS: Division of Social Sciences</td>
<td>Division First Term</td>
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</tr>
<tr>
<td>White Female</td>
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<td>10,199</td>
<td>1,193</td>
</tr>
<tr>
<td>Total</td>
<td>Female</td>
<td>25,138</td>
<td>2,720</td>
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<tr>
<td>Asian/PI</td>
<td>Male</td>
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<td>785</td>
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<tr>
<td>Unknown</td>
<td>Female</td>
<td>1,731</td>
<td>186</td>
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<tr>
<td>Filipino</td>
<td>Asian Subgroup</td>
<td>1,927</td>
<td>203</td>
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<td>$5,000 to $9,999 EFC</td>
<td>Financial Aid</td>
<td>4,607</td>
<td>480</td>
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<td>HH Income &gt;$120k</td>
<td>Household Income</td>
<td>7,704</td>
<td>794</td>
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<tr>
<td>HH Income $80k to $120k</td>
<td>Household Income</td>
<td>7,087</td>
<td>714</td>
</tr>
<tr>
<td>Japanese</td>
<td>Asian Subgroup</td>
<td>945</td>
<td>95</td>
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<tr>
<td>East Indian/Pakistani</td>
<td>Asian Subgroup</td>
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<td>122</td>
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<td>Engineering</td>
<td>Division First Term</td>
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<td>&gt;=$10,000 EFC</td>
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<td>Asian/PI</td>
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<td>Bay Area (less Solano)</td>
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<td>Pacific Islander</td>
<td>Asian Subgroup</td>
<td>464</td>
<td>39</td>
</tr>
<tr>
<td>Chinese</td>
<td>Asian Subgroup</td>
<td>6,724</td>
<td>504</td>
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</tbody>
</table>
Other Highlights of Appendix B (SARI Report #374):

Figure 3 (see Appendix B) shows that one-year attrition decreased by one percentage point from 1995 to 2004 and figure 4 shows that two-year attrition fluctuated between 10 and 13 percent during that time period. In figure 5 it can be seen that total attrition measured six years from Fall 2006 decreased from 18.8% in 1995 to 17.2% in 2000.

Figure 6 contains the same information as figure 2 with two columns added which contain the percent on probation or subject to dismissal during their first and last terms of students who left within two years. For some groups over thirty percent were in academic difficulty at the end of their first quarter. For these students an early detection system would be helpful to monitor their progress and assist them as needed. For many of the groups over forty percent were in academic difficulty at the end of their last quarter.

Figures 7 through 14 provide profiles of all undergraduate students enrolled. The percent of female undergraduates has fluctuated between 55 and 56 percent since 1998. The percentages of underrepresented students have remained essentially constant since 1995 while the percent of Asian/Pacific Islanders has increased as Whites has decreased by the same amount.

Figure 14 shows that females have consistently higher graduation rates than males although the latter’s graduation rate has increased slightly.

Figure 15 provides graduation rates by ethnicity and shows that White and Asian/Pacific Islanders have the highest graduation rates. The graduation rates for Latinos have been relatively constant with fluctuations between 72% and 77% with no clear trend. African American graduation rates increased for three years then decreased. The increase could be the result of greater selectivity in the admissions process resulting in a smaller cohort.

In figure 16 it can be seen that Chinese and Japanese students have the highest graduation rates among Asian groups whereas Korean, East Indian/Pakistani, and Vietnamese students have the lowest.

Figure 17 shows graduation rates by geographic regions with students from the Bay Area having the highest graduation rates. Students from Southern California and from the U.S. outside California have the lowest graduation rates.

Figure 18 shows the relationship between household income and graduation rates with those students from families with incomes above $120,000 having the highest graduation rates and those students with family incomes below $40,000 having the lowest graduation rates. Students who did not declare their incomes have graduation rates consistently above 80%.

Figure 19 shows that EOP students have graduation rates consistently below 80%. Figure 20 shows that students in the College of L&S: Division of Mathematics and Physical
Sciences had the lowest graduation rates while those in the division of Humanities, Arts & Cultural Studies had the highest. Figures 21 through 27 give the percent of students on probation or subject to dismissal by different variables. In all the charts the rates increased from 2005 to 2006 which may be explained by the fact that the University began to enforce minimum progress in a more stringent way. The groups with the highest rates are males, African Americans and Latinos, Koreans, students from Southern California, low-income students, Engineering, and Mathematics and Physical Science students.

Figure 22 shows that the percent of African American students on probation or subject to dismissal jumped from 16% to 21% from 2005 to 2006. The jump for Hispanic students was from 13% to 18% whereas the jump for White students was from 7% to 9%.

Figure 25 shows that the percent on probation or subject to dismissal increased the most for students with household incomes below $40,000. In Figure 26 it can be seen that the percent of EOP students on probation or subject to dismissal jumped from 13% to 20% from 2005 to 2006. The implementation of the new minimum progress policy has resulted in differential impacts on different groups of students. The change appears to have put students, who were already more likely to be in academic difficulty, at even greater risk.

Will You Graduate From UC Davis?

SARI Report #375, Will you graduate from UC Davis? provides the results of Quick Survey 323, Winter 2007, which posed the question to all undergraduates, “How sure are you that you will graduate from UC Davis?” (see Appendix C) Of the over fifty-nine hundred students who filled out the survey (see figure 1), 87% were “very sure” or “sure” they will graduate. Nine percent were “not very sure”, two percent “think it unlikely”, and another two percent were “sure I won’t” for a total of 13% who were not sure of graduating.

The percentage of undergraduates not sure of graduating from UC Davis by class levels (figure 2) was as follows: 21% freshmen, 17% sophomores, 8% juniors, and 5% seniors. Fifteen percent of high school entrants and 7% of transfers were not sure of graduating (figure 3). Eleven percent of the females who responded and fifteen percent of the males were not sure of graduating (figure 4).

The percentage of undergraduates not sure of graduating from UC Davis by ethnicity (figure 5) ranged from 23% of Other Asian to 7% of Japanese students. Thirteen percent of Latino, 10% of African American, 11% of American Indian, and 9% of Caucasian students were not sure of graduating.

When the percentages were broken down by gender and ethnicity (figure 6), in all cases but one (African Americans) males are less confident of graduating than females. It is not clear why this one exception appeared.
The percentage of undergraduates not sure of graduating from UC Davis by academic standing indicated that 10% of students in good standing were unsure of graduating. Twenty-eight percent of students on academic probation and 44% of those subject to dismissal were not sure of graduating.

The major reasons given for why students thought they might not graduate (figure 7) included academic difficulty (50%), lack of mentorship and proper guidance (33%), plan to transfer to a four-year institution (32%), financial difficulty (30%), don’t feel like a part of the campus community (27%), personal reasons (26%), and socially uncomfortable at UC Davis (23%).

A comparison of respondents who are in good academic standing versus those who are not yields the predictable results that those on probation or subject to dismissal are significantly more likely to cite academic difficulty as a reason (figure 8). Also, students who are not in good standing are more likely to mention lack of mentorship and proper guidance. Respondents in good academic standing are more than twice as likely to state they are planning to transfer to a 4-year institution as a reason for not graduating from UC Davis as compared to students not in good standing.

**Respondents from underrepresented groups are over twice as likely as other respondents to cite financial difficulty as a reason they are unsure of graduating from UC Davis** (figure 9). They are somewhat more likely to say they are socially uncomfortable at UC Davis and to cite family responsibilities as a difficulty. They are, however, no more likely than other respondents to cite academic reasons for their lack of confidence in graduating and they are equally as likely to be planning a transfer to another 4-year institution.

EOP students are more likely to cite academic difficulty, financial difficulty, and lack of mentorship and guidance as the reasons they are unsure of graduating from UC Davis (figure 10). They are less likely than non-EOP respondents to be planning to transfer to a different 4-year institution.

As noted above, respondents in good academic standing were more likely to state that transferring to a 4-year institution was a reason they did not think they would graduate from UC Davis. These students are able to succeed academically at this campus but choose to transfer to another institution for any of a variety of reasons. These students are classified as “successful leavers” according to a classification devised by the Educational Policy Institute in which registration status is coded “leave” or “persist” and academic status is “successful” or “failed”. In this way students can be classified as failed leavers, failed persisters, successful persisters, and successful leavers. The implications for service delivery are different for each of the groups.

Students planning to transfer to a four-year institution are much less likely than those who aren’t planning to transfer to cite academic difficulty, lack of mentorship, or financial difficulty as reasons for not graduating from UC Davis. Instead, they are more likely to indicate social reasons for not graduating from this campus (figure 11).
Students who are uncertain they will graduate from UC Davis but do not plan to transfer to a 4-year institution may be those who most need assistance to complete their undergraduate degree. These students may become some of the “unsuccessful leavers”. These students are more likely to experience academic difficulty, to feel a lack of mentorship and guidance, to find it financially difficult to remain in school, and to feel they are not a part of the campus community. These are the students who are likely to gain the most from increased efforts to improve campus retention.

**A Brief Look at Theories of Student Attrition**

A 1973 article by Vincent Tito, “Dropout in Higher Education: A Review of Recent Research”, initiated decades of research on student attrition and student retention. Tinto’s earliest theory identifies student attributes, goals and commitment, experiences at the institution, commitments outside the university, and both academic and social integration as key factors that contribute to student retention.

Tinto’s model of integration was based on Spady’s (1971) extension of the theories of French sociologist Durkheim to postsecondary education. Spady was the first researcher to apply Durkheim’s theory of suicide (1951) to dropping out and draw an analogy to persistence.

The work of social anthropologist Arnold Van Gennep, The Rites of Passage (1960), was an influence on Tinto’s integration model. Van Gennep proposed that there were distinct stages in the transformation of individuals from one group to another. For instance, each stage in the progression to adulthood involved a different kind of interaction between the individual and other members of society. Tinto observed the same difficulties in the series of transitions of students having to leave one community for another.

Bean (1980) developed a model of student departure based on psychological processes to explain the factors contributing to student attrition. The model was an adaptation of an organizational turnover model, which was developed to explain employee turnover in work settings. Bean’s causal model suggested that student background characteristics must be taken into account to understand their interactions with the environments of higher education institutions.

Alexander Astin developed an “involvement theory” to explain student persistence. The theory contains several premises but the fundamental notion is that the greater the student’s involvement in the endeavor the greater the likelihood of success.

Vincent Tinto’s (1993) revised model of student departure suggests that the extent to which a student is integrated into the academic and social environments of the college determines the extent to which the student is likely to remain at the institution.

Rendón, Jalomo, & Nora (2000) argue that existing retention/involvement theories need
to be taken further in order to determine how race, class, gender, and other issues affect retention for diverse populations of students at diverse institutions.

Bean and Eaton (2002) offered a refined psychological model of college student retention. The foundations of the model were the psychological processes fundamental to academic and social integration. They presented four psychological theories to underlie their model: 1) attitude-behavior theory, which provided the overall structure of their model, 2) coping behavioral theory, the ability to assess and adapt to a new environment, 3) self-efficacy theory, an individual’s self-perception as capable of dealing with specific tasks or situations, and 4) attribution theory, wherein an individual has a strong sense of internal locus of control.

Kuh (2003) observed that students involved in educationally productive activities in college develop habits that engage their capacity for continual learning and personal development.

Whether a student is involved in the academic and social life of the institution or is integrated into it, the research suggests that the sooner and more deeply a student is connected to the intellectual and social life of the institution, the more likely that student is to persist and graduate.

What Works According to the Literature

According to Tinto’s Student Integration Model (SIM), persistence depends largely on the academic and social integration of the student. Students, especially at-risk students, come with different attributes (family background, individual characteristics, former schooling, etc.) but according to the literature universities with better retention rates promote the following conditions:

1. A seamless approach to learning (intellectual integration),
2. A sense of belonging (social integration),
3. Emphasis on major and career goal selection early in the process, and
4. Implementation of an early warning system.

A seamless approach to learning requires greater faculty involvement in student retention. Through the classroom, mentoring activities, and student research presentations, faculty can engage and motivate students intellectually. (Chenoweth, 1999; Good, Halpin, & Halpin, 2002; Hurte, 2002; Landry, 2002; Mangold et al., 2003; Nagda et al., 1998; Padgett & Reid, 2003; Pascarella & Terenzi, 1977; Roach, 1997, 1999; Rodriguez, 1997; Stage, 1989)

Universities that promote social integration use a variety of approaches: first year seminars, orientation programs, aggressive counseling, frequent and informal contacts with students (personal, email, or letter), multicultural centers, and summer transition programs. (Collinson, 1999; Braxton & McClendon, 2002; Braxton, Hirschy, &
Major selection and career planning early in the process reduces uncertainty and it increases the student's commitment to graduate (Gordon, 1985; Leys, 1999; Solberg, et al., 1998). Beal and Noel (1980) set out three main services as being important for undecided students: orientation, academic advising, and career services.

Another common component in a retention strategy is an early warning system. Such a system could identify struggling students by absenteeism, probationary status, grades, lower academic self-confidence, poor study and time management skills, and faculty referrals. According to Lotkowski et al., (2004), academic self-confidence, academic goals, and study skills have a stronger relationship with retention than high school GPA or ACT scores. At Texas State University a web-based system allows faculty and staff to refer students needing additional help in academics, career planning, mental and physical health, and community inclusion and socialization. The information is submitted to the vice president of student affairs office and they contact the appropriate offices for intervention. Twenty-eight liaisons from Academic Advising, Academic Support, Student Health, Counseling, Career Services, Campus Activities and Student Organizations, and Residence Life were trained to handle the referrals (http://www.vpsa.txstate.edu/retention/retention-plan.html).


IV. ACADEMIC DEPARTMENTS’ BEST RETENTION PRACTICES

The STAR Committee Retention-Related Services Survey (Appendix D) was sent to Student Affairs units and the chairs of academic departments during February, 2007. It was clear from the responses that Student Affairs units provide a wide array of retention services some of which are specifically intended for high risk students.

Of the 80 academic departments surveyed 15 provided answers to the questions posed on the survey. While no generalizations about all departments can be made from these responses, it was clear that some provided excellent services and experiences for their majors. The following is a list of the best practices which were taken from the survey responses. It should be noted that implementing many of these recommendations would be easier for large departments with significant resources.

New Student Orientation
Departments including Neurobiology, Physiology, & Behavior hold new student orientations every fall quarter to welcome freshmen and transfer students. At the orientation students are introduced to the department’s key personnel including the master advisor, advising staff, and the club officers. A part of the presentation includes strategies for success and how to get the most from their UC Davis experiences. In addition, some departments host a fall festival potluck for faculty, staff, and students.

Mandatory Advising
The College of Engineering has mandatory annual advising with some departments using internal software programs for academic planning. The College requires students to meet with advisors at least once a year to review their progress. The advising requirement is implemented by holds placed in SISWeb so when students log in, it is the first thing they see. If they do not get the hold released by meeting the advising requirement, students are blocked from registering for the next quarter.

Student Database and Follow-up
The Department of Computer Science has created an internal database which provides information about the academic status of its students. Department of Statistics staff send emails to marginal students inviting them to meet with an adviser for academic assistance.

99 or 199 Experience
An excellent practice is to encourage faculty as is done in Computer Science to offer students opportunities to participate in a 99 or 199 experience thereby creating mentoring possibilities.

Committees
Computer Science encourages student representation on departmental committees which deal with undergraduate matters.
Courses and Seminars
Departments and programs can team with Student Affairs staff to offer specialized courses or seminars which serve the needs of specific groups of students. Currently, Chicano/a Latino/a Studies, African and African American Studies, Asian and Asian American Studies, King Hall Law School, and the Learning Skills Center offer such courses.

Web Site and Handbook
Many departments’ web sites contain excellent information for students. The Art History site gives information on the curriculum, information on classes, and contact information for advisers. In addition to the web site, Neurobiology, Physiology, & Behavior developed an undergraduate handbook in order to provide excellent help to students.

Undergraduate Research
Departments should consider initiating an undergraduate research program to engage outstanding students to work more closely with faculty mentors and to foster collaborative and interdisciplinary work amongst student groups.

Student Clubs
The Department of Food Science and Technology offers a student club which keeps participating students connected through many activities including meetings, social events, and workshops with industry representatives.

Alumni
Departments should try to keep in touch with alumni. The Department of Food Science and Technology holds a pre-Picnic Day barbecue each year for alumni and current students, faculty and staff.

Awards Ceremony or Banquet
The Department of Comparative Literature and the College of Engineering hold an annual awards ceremony in June for recipients of all student recognition awards. A successful alumnus may be asked, as is the case with the Department of Food Science and Technology, to be the speaker at an annual student recognition banquet.
V. RECOMMENDATIONS

Based upon the findings given above, the Committee decided to offer its recommendations within the framework of a retention model. The work of Tinto and Astin suggest that student “involvement” or “integration into the academic and social life of the institution” increases the chances of retention and graduation. The Committee has deemed this aspect of the model “connecting students to the University”.

As shown earlier in SARI Report #374 figure 2, the 2-year attrition rate for some groups is vastly larger than for other groups. It follows that making concerted efforts to connect members of these high risk groups to the University should decrease their attrition rates and improve their graduation rates.

As noted above, figure 6 of SARI Report #374 shows that a substantial percentage of students who leave the University during their first two years are in academic difficulty during their first quarter. It, therefore, is important to address these students’ difficulties as soon as possible. The Committee members believe that a “campus-wide early detection system” is crucial to improving retention and graduation rates. Also, Figure 1 of SARI Report #374 shows that most attrition occurs during students’ first two years on campus. The fact that large percentages of students, who leave within their first two years, are in academic difficulty during their first quarter suggests that there should be “follow-up procedures for students in academic difficulty”. The Committee members believe there should be systematic, well-coordinated, campus-wide efforts to work with students who are on probation or subject to dismissal. The intent here is to turn these “failing persisters” into “successful persisters” rather than letting them become “failed leavers”.

As discussed earlier, some students who are in academic good standing choose to transfer to another 4-year institution. These “successful leavers” make the choice to leave the University. Other students leave because they are dismissed, disenrolled, or feel they have no other choice but to leave and may not interact with the offices that can best assist them. For these students, it would be helpful for them to meet with a staff member or members who can facilitate the process. That is, if it became a “University expectation” that students leaving campus had to go through an “exit procedure”, perhaps more students would be retained. That is, the retention staff members might be able to help the students with whatever problems are making them feel they must leave. In the case of the “successful leavers”, the exit procedure might help the University learn why these students chose to leave thereby creating an opportunity for institutional self-examination.

The Committee gives its recommendations within the framework of the retention model which includes: better connecting students to the University, a campus-wide early detection system, follow-up procedures for students in academic difficulty, and an exit procedure for students intending to leave the University.
New Student Questionnaire

New students should complete a questionnaire on MyAdmissions or during Orientation. There are at least two retention-related purposes for surveying the students.

To determine students’ interests so they can be informed of or invited to activities for which they have an interest (The commercially available UPeers is such an instrument). If possible, this follow-up should begin during Summer Orientation. Student organizations and clubs could recruit students who indicated a particular interest based on the questionnaire results. At other UC campuses student groups have access to entering freshmen information and can make contact with them before their arrival on campus.

To determine students’ beliefs about themselves such as their concept of their own abilities (academic self-confidence), willingness to seek help, etc. (Noel-Levitz has developed a questionnaire, The College Student Inventory). As a result, the campus has developed its own survey to serve this purpose. This information could be used to connect students to the appropriate campus resources, identify potential “at-risk” students, and could be part of the early detection system.

Mentoring

There have been efforts recently to expand the mentoring opportunities for students on campus. One noteworthy effort is a collaboration between the UCD Senate Affirmative Action and Diversity Committee and the Associated Students of UC Davis. This collaboration should lead to more mentorship opportunities for students.

These programs should include faculty, staff, and students as mentors and should be focused on the student groups with the highest two-year attrition rates. The programs could be based on different student communities or areas of interest. Participating students should be chosen who are receptive to the idea of developing a relationship with a mentor.

Academic Personnel Manual policy APM 210-1d, Systemwide Academic Tenure Program, has added a diversity component which can be taken into account when a faculty member is evaluated. Thus, faculty members could become mentors of underrepresented students which would help them in their reviews. This policy should be publicized widely to encourage faculty to participate and remind tenure review committees of its existence.

More generally, teaching faculty, lecturers, staff, and students should be encouraged to view teaching as a mentoring opportunity. That is, the campus instructional community should develop the mindset that teaching is not only an opportunity to impart knowledge but also is an arena for developing students by means of mentoring relationships.

Finally, students should be encouraged to seek out mentoring relationships with faculty, staff, and other students on their own. If students meet members of the campus community with whom they feel they have rapport, they should attempt to develop the relationship. Thus, students should take the initiative to get into mentoring situations and take responsibility for their success.
Advisors
All freshmen and new transfers should be assigned advisors upon matriculation. It is important for students to have a point of contact when they come to campus where they can receive reliable information. This recommendation is especially important for students who are unsure of their majors and enter the University as “exploratory” or “undeclared”. Perhaps these students without a declared major can be assigned to deans’ office advisors as an initial point of contact.

Seminars
The freshman seminar “Navigating the Research University” should be available to all new students. It is recommended that the seminar be of small size (15 to 20 students) because it allows students to get to know the instructors and each other. Under this circumstance the instructors have the potential to serve as mentors for the students. It is also recommended that the seminars be team taught by a faculty member and a staff member as the optimum instructional model.

Seminars should be created which are geared for the transfer student population as well. One benefit of this opportunity is that transfer students who often feel isolated on campus can get to know other students with similar experiences and needs as their own.

On-Campus Housing
Housing should be available on campus for all new students: freshmen and transfers. This recommendation is a reiteration of one included in A Student Affairs Review of the Transfer Student Experience in 2002 since on-campus housing is only available to all freshmen now. It is extremely valuable to new students to be able to live in a community of individuals going through the same experiences. Additionally, the excellent programming presented by Student Housing gives students many opportunities to learn about valuable resources and various aspects of campus life.

Campus Climate
Professors who are insensitive to diversity create classroom environments which are not supportive of the success of underrepresented students. The Vice Provost for Academic Personnel should be encouraged to develop a diversity training program for faculty that could become a required part of their promotion packages.

Diversity issues should also be part of teaching assistant training so that TAs who are often the first point of contact for students in large lecture courses are sensitive to the situations of students, particularly those students from underserved communities.

Student Affairs staff who work with students should also participate in diversity awareness training programs.

Academic Preparation Programs
Strengthen the pipeline of students who participate in pre-college preparatory programs by connecting them with campus resources when they first come to campus. For instance, ensure they attend the EOP session of Orientation, the summer component of STEP, or, possibly, apply for participation in the TRiO Scholars Program. In any case, once on campus their academic progress should be regularly monitored.
Commuters
Create a location on campus which could be used as a home base similar to or in collaboration with Advising Services’ Reentry Services Student Lounge by commuting students who could gather there between classes. This building could be modeled after the resource center for commuters at CSU Sacramento. Alternatively, a center for commuters could be combined with a transfer student center if the latter comes to pass as recommended in A Student Affairs Review of the Transfer Student Experience in 2002.

Campus-wide EARLY DETECTION SYSTEM

Identification of At-Risk Students
Undergraduate Admissions should identify newly admitted students who submit a Statement of Intent to Register and are at the greatest risk based on variables like HS GPA, SAT scores, and membership in groups with high 2-year attrition rates. At risk students can also be identified by means of the survey of new students which includes measures of academic self-confidence. At this point, the campus does not have the resources to identify and serve fully all at-risk students.

The committee recommends that these students should participate in STEP which should be fully funded in order to accommodate them. **Once on campus the academic progress of at-risk students should be regularly monitored.**

Approximately 10% of transfer students enter UC Davis with grade point averages below 3.0. This population is very high risk and should be monitored closely until they have successfully established themselves academically.

Teaching Assistants
Teaching assistants should make special efforts to assist students who perform poorly on midterms, especially the first one each term. TA training should be expanded to include cultural awareness and sensitivity to the needs of students. If it was emphasized in training that TAs should be particularly concerned about students who are having difficulty, they can have a positive impact on retention. TAs could attach a half-sheet of paper describing support resources to the midterms of students who perform poorly or students could receive information via MyUCDavis.

Other Teaching Staff
Teaching faculty, lecturers, staff, and students should be well versed in campus resources in order to be able to make referrals to the appropriate services in a timely fashion.

New Student Questionnaire
A questionnaire containing questions which identify students who are uncertain about their academic backgrounds, the college-going experience, or some other indicator could be used to identify potentially at-risk students before they arrive on campus.
Follow-up procedures for STUDENTS IN ACADEMIC DIFFICULTY

Electronic Tracking System
A fully automated, timely, campus-wide electronic system for identifying students earning D or F grades should be implemented. The names of these students should be sent to advisors who can meet with them as soon as possible. Registration holds may be needed to ensure that students visit advisors. While such a system exists in two of the colleges, additional resources are needed to extend it to all undergraduate colleges and departments who follow students’ academic progress.

Deans’ Offices and Academic Support
Deans’ offices should make contracts with students in academic difficulty to require students to use the appropriate support services. A feedback loop should be put in place so that deans’ office staff know if students are fulfilling the requirements of the contracts (e.g., a referral slip containing a list of LSC services and a place for the appropriate staff member to sign when the student has completed the obligation).

Degree Navigator
Degree Navigator can be a valuable tool to check a student’s major, college, and university requirements and help plan a course of study. With further development, it could be used by staff to communicate among themselves about individual students. Once Degree Navigator’s reliability issues are resolved, staff in at least one college intend to use this feature.

EXIT PROCEDURE for students intending to leave the University

An Exit Procedure
Create and notify the entire campus community about the existence of an exit procedure which requires students intending to leave the University to visit Student Accounting, University Registrar’s Office, Student Housing, if appropriate, and an office where they participate in an exit interview. One of the purposes of the interview would be to help solve students’ problems or direct them to the appropriate resources. The assistance might encourage students to remain at the University or, as noted earlier, it might allow University staff to learn why the successful student has decided to leave.

GENERAL RECOMMENDATIONS

Focus on the Most At-Risk Students
After students submit their Statements of Intent to Register identify a group (the size of which will depend upon available resources) of students belonging to the most at-risk groups identified in this report. Support their participation in STEP and provide them with advising, mentoring, tutoring, cultural events, and other services like those provided by the TRiO Scholars Program. The most cost effective way to serve them would be to add one or more program advisors to the current TRiO Scholars Program staff thereby utilizing an administrative structure which is
already in place. High risk transfer students should be included as well.

**Timely Intervention**

As noted earlier in the findings section, student attrition is greatest during the first two years of study. Efforts to retain students should be focused on times when students are more likely to leave the University such as at the end of their first and second years.

**Academic Departments’ Best Practices**

The Committee recommends that academic department personnel review the list of best practices and implement those practices which they deem feasible given their department’s budgetary and personnel limitations.

**Creativity**

The Committee recommends that all departments be creative in thinking of ways to increase the likelihood of success of low-income/high risk students. For instance, the UCD Bookstore has developed a program, which is dependent on faculty support, in which students can buy books new or used, or they can rent them. The possibility of renting text books could potentially serve low-income students very well.

**Dismissal Policies**

In Fall 2006, there was a marked increase in the percent of students on probation or subject to dismissal, especially for high-risk groups including low-income and EOP students. The committee recommends that campus policy makers and implementers carefully study the effects of these changes. Otherwise, the attrition rates of the most at risk groups will increase and with it the diversity of the campus will decrease as the campus climate deteriorates.

**Exit Procedure**

It is important to make students aware that it is a campus expectation that they participate in the exit procedure if they decide to leave the University. It should be emphasized that one of the main purposes of the exit procedure is to help solve students’ problems or direct them to the appropriate resources. The assistance received might encourage students to remain at the University or, as noted earlier, it might allow University staff to learn why the successful student has decided to leave.
VI. APPENDICES

Appendix A: The Education Trust 6-Year Graduation Rates


Appendix C: SARI Report #375, Will You Graduate From UC Davis?

Appendix D: STAR Committee Retention-Related Services Survey