



SFU

SIMON FRASER UNIVERSITY
INSTITUTIONAL RESEARCH AND PLANNING

Understanding Student Retention at SFU

Report #3

How Does SFU Measure Up?

Prepared by
Joanne Heslop, Acting Director
Jessica Tilley, Analyst
Institutional Research
and Planning

November 30, 2007

PREFACE

For a number of years, Simon Fraser University (SFU) has had the luxury of paying little attention to student attrition – approximately 30% of undergraduate students admitted to SFU leave the university without completing a credential. In recent years, students who left were easily replaced from an abundant selection of well-qualified new students seeking a spot in a BC university. However, as the university-age population in BC is beginning to decline and the BC economy remains strong, SFU is now facing increasing challenges in attracting and retaining undergraduate students. SFU recognizes that retaining more of our existing students through to degree completion will reduce the number of new students we need to admit each year.

The ways in which students leave and the reasons for their departure are multi-faceted and important issues for SFU to understand. To be successful in improving student retention and the student academic experience, we must identify and minimize the factors that contribute to early student departure. Institutional Research and Planning (IRP) has responded to the need for more information by preparing three reports in this series entitled, "Understanding Student Retention at SFU"¹.

The first report, "Student Pathways Through Academic Standing", by Jessica Tilley, was released in August of 2007. The analysis focused on the various pathways students may take from SFU entry to exit, either with or without a credential upon departure. The report reveals that 77% of students admitted to SFU remain in Good Academic Standing throughout their stay at SFU (or through their first 16 semesters at SFU), and roughly two-thirds of these students will graduate within approximately five years. However, the balance of those admitted (22%) are placed on academic probation within roughly five years of admission; half of these students will continue to struggle and drop out voluntarily or they will be required to withdraw.

The second report, "Why are Students Leaving SFU?", written by Daniel Morris, was released in October of 2007. This report provides a synthesis of various surveys of current and former students. It summarizes the student perceptions, experiences and factors that might be causing students to leave SFU before completing a degree. The report reveals that SFU's student population is unique and diverse and not all students experience SFU in the same way; inadequate course availability has a negative impact on student satisfaction; student perceptions of instructors and academic programs are not consistently high; student integration and engagement is relatively low; external influences, such as finances, employment and personal stress have a profound impact on student retention.

This third report, "How Does SFU Measure Up?", provides a summary of the state of student retention at SFU, from the perspective of the readily available data in our student information system (SIMS) and the retention databases in SFU's Office of Institutional Research and Planning. Of those students who leave early, the majority depart within the first year of admission to SFU; attrition rates roughly drop by half in each subsequent year. Some students are more likely to be retained at SFU through to degree completion or they graduate more quickly than others, including: students admitted with high entrance averages, direct-entry students from secondary schools (as opposed to delayed-entry students), younger students, female students, domestic students (rather than international), students with high first term CGPA's, and students who maintain a continuous or persistent period of sustained registration terms.

¹ The series of reports may be found in the IRP web site at: <http://www.sfu.ca/irp/Students/index.html#retention>

TABLE OF CONTENTS

PREFACE	3
EXECUTIVE SUMMARY	5
INTRODUCTION	11
STUDENT RETENTION – WHAT DOES IT MEAN?	11
STUDENT DIVERSITY	12
STUDENT RETENTION IS MULTI-FACETED	13
THE STATE OF STUDENT RETENTION AT SFU	13
A. STUDENT PERSISTENCE, DEGREE COMPLETION RATES AND TIME TO GRADUATION	14
HIGH SCHOOL ENTRANCE AVERAGE:	15
DIRECT VERSUS DELAYED ENTRY TO UNIVERSITY:	16
GRADE POINT AVERAGE FROM COLLEGE OF TRANSFER:	17
AGE:	18
GENDER:	19
ADMISSION FACULTY:	20
INTERNATIONAL STUDENTS:	23
CUMULATIVE GRADE POINT AVERAGE:	25
COURSE TAKING AND ENROLLMENT PATTERNS:	26
B. DROPOUTS – WHEN DO THEY LEAVE?	27
C. STOPOUTS – DO THEY RETURN?	29
D. STUDENT RETENTION COMPARISON: SFU VERSUS OTHER INSTITUTIONS	30
CONCLUSION AND RECOMMENDATIONS	34
APPENDIX A: SFU STUDENT DIVERSITY AND DEMOGRAPHIC TRENDS	34
REFERENCES	38

EXECUTIVE SUMMARY

This report provides a summary of the state of student retention at SFU, from the perspective of the readily available data in our student information system (SIMS) and the retention databases in SFU's Office of Institutional Research and Planning (IRP). Throughout this report, the published research on college and university student retention is used as a framework for discussion, analysis and presentation of the results.

The results of the analysis reveal that better student retention outcomes are generally associated with the following factors or student features:

1. Higher admission GPA's,
2. Admission direct from high school (as opposed to delayed-entry),
3. Female,
4. Admission at a younger age,
5. Domestic student status (rather than international),
6. Admission to the Faculty of Business,
7. Higher cumulative GPA's in the first term,
8. Full-time credit load,
9. Maintaining a continuous enrollment with few or no stopouts.

A brief synopsis of the published research and the relevant SFU findings are provided below:

- *Vincent Tinto suggests a number of “pre-entry characteristics” will strongly influence student retention rates, one of which is high school grades.* Compared to those with lower admission scores, students admitted to SFU directly from BC secondary schools with **higher entrance averages** typically achieve higher CGPA's in their first term and after 30 and 60 credits and upon graduation; their degree completion rates are higher; they drop out and stop out at lower rates; and their rates of poor academic standing (OAP and RTW)² are lower. Similar findings are revealed for BC College Transfer students, by admission GPA.
- *Berkner et al (2002) found that students who delay entry into postsecondary education after high school are less likely to earn bachelors degrees.* Compared to students who delay their entry into postsecondary education by more than one year, **direct-entry** students are admitted to SFU with admission averages slightly higher than delayed-entry students and they are less likely to experience poor academic standing, less likely to drop out and therefore, more likely to complete a bachelor's degree.
- Compared to older students, **younger students** achieve higher degree completion rates, higher persistence rates and lower dropout rates than older students. This is likely because younger students enter SFU with higher admission averages than older students, but it could also reflect differences in credit loads and academic goals. *Moore (2007) suggests that younger students might be more motivated in completing their credential, given that their credential will give them the greatest potential for increasing their lifetime earnings.*

² OAP=On Academic Probation; RTW=Required to Withdraw.

- With good academic performance (low OAP and RTW rates) and seemingly high dropout rates, many **older students might in fact be opting out**, rather than dropping out. These “opt-outs” might be dabbling in courses with no intention of completing a degree; they take the courses they want and then leave. This difficulty in distinguishing opt-outs from dropouts suggests that SFU would be in a better position to provide meaningful measures of student achievement if the goals and academic intentions of each of our students was more clearly identified upon admission and re-assessed on an ongoing basis.
- *Daniel Drolet (October, 2007) provides evidence that “boys seem to underachieve educationally relative to girls” and Moore et al (2007) also found that females enroll and complete degrees faster than males – females are likely to complete within five years while males are still persisting and therefore taking longer to complete.* On average, **female students** are admitted to SFU with higher admission GPA’s than male students. Females complete degrees at significantly higher rates and they graduate in less time. Despite their higher admission averages and higher degree completion rates, there is no evidence of a gender gap in academic performance among degree completers – the change in GPA from admission to graduation is virtually the same for the two groups. Reflected in their lower dropout rates, female students are less likely than males to experience academic standing difficulties (OAP or RTW).
- *Research in Australian higher education finds that international students have lower retention rates than domestic students (van Stolk et al, 2007); and Grayson (2005) found that domestic student GPA’s at selected Canadian universities were higher than GPA’s achieved by international students.* How well do international students perform at SFU?
 - **International students** admitted to SFU from **BC Colleges** have higher degree completion rates than domestic students, mainly because they have higher registration persistence – they stop out less frequently than domestic students. However, international students achieve lower first term GPA’s and cumulative GPA’s at SFU than domestic students, even when controlling for admission GPA. International students have higher OAP and RTW rates and they suffer a greater “transfer shock” – their GPA decline from admission to the end of their first term is 0.56 grade points, compared to a 0.42 decline for domestic students. Although the CGPA’s for both groups do gradually recover over the course of their studies at SFU, on average, the CGPA’s of international students do not improve to the same extent as domestic students.
 - **International students** admitted to SFU from BC and non-BC **high schools** have lower degree completion rates than domestic students, even though they stop out less frequently than domestic students. These international students achieve lower first term GPA’s and cumulative GPA’s at SFU than domestic students, have higher OAP and RTW rates and they suffer a greater transfer shock. The transfer shock of international students admitted from grade 12 is also higher (0.92) than those international students admitted from BC colleges (0.56).
- Student retention at SFU varies by **Faculty**:
 - Students admitted to the Faculty of Business achieve higher retention rates and degree completion rates than students admitted to other Faculties. At 67%,

BC12 direct-entry students admitted to the Faculty of Business have the highest six-year graduation rate. By comparison, the six-year graduation rates of the other Faculties range from 48% to 55% (excluding Health Sciences and Education with few direct admits).³

- The student dropout rate is highest among those admitted to “no specific Faculty”; dropout rates are also relatively high among students admitted to the Faculties of Science and Arts & Social Sciences. Business has the lowest dropout rate.
- Within two years of admission to SFU (from 1996/97 to 2001/02), 29% of students across all Faculties were placed on academic probation (OAP) and 11% were required to withdraw (RTW). These rates ranged from a high of 36% OAP and 14% RTW in the Faculty of Science to a low of 9% OAP and 3% RTW in Business.
- Students may **switch from one Faculty to another** over the course of their studies at SFU. Faculty switching might be a measure of student uncertainty or unclear academic intentions and this may have an impact on student retention.
 - Over two-thirds of students remain in the Faculty to which they were admitted.
 - Some students are more likely than others to switch out of the Faculty to which they were admitted, including Science students, male students, direct-entry BC12 students and international students.
- *Murtaugh, Burns and Schuster (1999) found that the probability of returning for a second year of college increased dramatically with higher GPA's. Higher **cumulative GPA** achievement by the end of the first term at SFU is associated with more positive student retention (partly attributed to our academic standing policy for continuance). Students with higher first-term CGPA's achieved lower rates of OAP and RTW, lower dropout rates, higher long-run cumulative GPA's and higher degree completion rates.*
- *Driscoll (2007) found that the greater the number of courses that college students took in their first semester, the higher their persistence rates from Fall to Spring and the higher their grades in the first semester⁴. In looking at **course enrollment patterns**, it was found that students who took just one course (three or fewer credits) in their first term were less likely to persist at SFU; students taking more than three courses (ten credits or more) in their first term achieved higher degree completion rates. Part-time SFU students generally achieve lower GPA's and lower persistence rates than full-time students.*
- *Moore et al (2007) found that maintaining continuous enrollment without stopping out resulted in higher completion rates. Maintaining **continuous enrollment** with few or no stopouts was common among SFU students who were admitted with higher admission GPA's. These students with infrequent stopouts achieved low OAP and RTW rates and higher long-run degree completion rates than students with frequent stopouts.*

³ Each of the Faculties at SFU have different admission requirements and admission GPA averages. Therefore, the Faculty differences in student retention and graduation rates can be largely explained by the distinct admission models.

⁴ In Driscoll's study, these were “transfer-eligible” college courses.

- **When do students leave?** *Published research consistently finds that the majority of students who drop out of post-secondary institutions leave between the first and second year.* In total, 21.5% of BC12 direct-entry students admitted to SFU in 2000/01 had left SFU without a degree by 2006/07, of which 43% of these 447 students had left within their first year (first three terms at SFU). *Levitz, Noel and Richter suggest that attrition rates reduce by half in each of the subsequent years in which the student is retained.* The attrition rates of this SFU cohort, also reduce in each of the subsequent years, with 22%, then 16%, 13% and 6% of the dropouts leaving by the end of the second, third, fourth and fifth years. Retaining more students in the first year might significantly reduce the attrition rate in subsequent years and overall for the cohort.
- **Do they return?** SFU's flexible degree program structure allows students to stop out from their studies for one or more terms and return to SFU in a later term. Students with more credits prior to stopping out are more likely to return to SFU and they return sooner than students with fewer credits prior to stopping out.
- **How does SFU measure up?**
 - Compared to other **BC universities** reported in the *2007 Maclean's University Rankings*, SFU's student retention⁵ rate (88%) matches that of UBC, and ranks higher than UVic (86.3%) and UNBC (73.3%).
 - SFU's retention rate ranks 4th out of eleven universities in the comprehensive category, an improvement over the 9th place ranking reported by Maclean's last year (85.1%).⁶
 - Compared to all other **Canadian universities**, SFU ties for 12th among 39 Canadian institutions on the year 1 to year 2 student retention rate, but lags behind the top retention rates (93%) achieved by medical/doctoral universities, Queen's and McGill.
 - Compared to **Ivy League institutions** in the USA, SFU lags well behind the rates of Columbia, Cornell and Brown University (97%) or Pennsylvania, Harvard, Stanford and Dartmouth (98%) or Yale University (99%).

⁵ The student retention rate reported by Maclean's is the Year 1 to Year 2 retention rate. It is the percentage of full-time, first-year students enrolled in Fall 2005 who returned to university the following year (2006).

⁶ Given that retention rates among institutions in SFU's category are similar, natural fluctuations in the retention rate can change the rank significantly.

Recommendations.

Based on the findings presented in this report, recommendations for further research and suggestions aimed at improving student retention at SFU have been identified by the author. These recommendations are intended to serve as a discussion piece and starting point for the Retention Planning Group at SFU as this group develops a plan to improve student retention at Simon Fraser University.

- 1) Target recruitment and admission efforts to attract well-qualified students. More selective recruitment and admissions would increase the chances of better retention outcomes, including:
 - Higher cumulative CGPA's at SFU,
 - Higher degree completion rates,
 - Lower rates of poor academic standing (OAP and RTW).

- 2) Offer **student retention initiatives and intervention programs** to groups of registered SFU students who are at high risk of early departure, including:
 - Students admitted with lower GPA's,
 - Students who delayed their entry to university after graduating from high school,
 - Male students,
 - Non-traditional or older students,
 - International students,
 - Selected students at risk of early departure admitted to Science or Arts and Social Sciences,
 - Undeclared students, or those without a major,
 - Students who achieve low CGPA's in their first term at SFU,
 - Part-time students,
 - Students who stop out or take a break from their studies.

- 3) Conduct personalized questionnaires with incoming, continuing and outgoing students to capture: (a) their academic intentions or goals, (b) their subsequent changes to their academic plans and (c) the extent to which their intentions or goals are achieved upon SFU departure. The information collected in personalized questionnaires would provide a more accurate distinction between opt-outs, stopouts and dropouts and could ultimately lead to improved student retention rates, purely through a more accurate labeling of student intentions and outcomes. The benefit of this suggestion must also be weighed against the possible perception of students that revealing their true intentions might limit their access to specific programs and courses they wish to take.

- 4) Since new students to SFU frequently experience "entry shock" or "transfer shock", further research is required to understand the ways in which this occurs and the factors that lead to a decline in GPA from admission to the end of the first timer. Consider tailoring orientation programs to specific student groups to help minimize the shock. Such target groups might include:
 - Direct-entry, delayed-entry or non-BC secondary school students,
 - International students from various regions of the world,
 - College transfer students,

- University transfer students,
 - Mature students or “non-traditional” students,
 - Part-time students,
 - Male students, female students,
 - Scholarship students,
 - Bursary students,
 - Employed students,
 - Students admitted at the margin or near GPA cut-offs.
- 5)** Conduct additional analyses to determine the early warning levels (such as low midterm grades or low CGPA levels with low credit accumulation) to identify students at high risk of dropping out. Offer early intervention programs to help these students maintain a good academic standing and to continue successfully in their program. Early intervention might occur at selected time periods, such as:
- After mid-term exams,
 - At the end of the first term of registration at SFU,
 - Upon the first stopout period or term of non-registration ,
 - After subsequent SFU registration terms when CGPA’s reach low levels.
- 6)** Encourage students to declare an academic program appropriate to their interests and goals; assist students in defining a plan to meet the requirements of the program.
- 7)** Encourage and assist students in maintaining continuous enrollment, thus reducing the chances of stopout and non-continuance.
- 8)** Focus student retention efforts on first-year students such that SFU increases the chances of retaining more students in the first year and ultimately reducing the attrition rate in subsequent years and overall.
- 9)** Given that students who stop out with low cumulative credits are at high risk of not returning, conduct further analysis to determine the most effective credit level at which intervention techniques could minimize the risk of dropping out.

INTRODUCTION

For a number of years, Simon Fraser University (SFU) has had the luxury of ignoring student attrition during a sustained period of excess demand for admission to BC universities. Recently, however, we have developed a renewed interest in student retention because the abundant pool of well-qualified university applicants appears to be declining. While this softening demand for university spaces might be attributed to changing demographics and a booming BC economy, SFU recognizes that it should do a better job of retaining its students. This report provides a summary of the state of student retention at SFU, from the perspective of the readily available data in our student information system (SIMS) and the retention databases in SFU's Office of Institutional Research and Planning (IRP). Throughout this report, the published research on college and university student retention is used as a framework for discussion, analysis and presentation of the results.

STUDENT RETENTION – WHAT DOES IT MEAN?

Clarity of Definition:

Clear and consistent definitions of student retention, attrition and persistence are difficult to find, especially when different institutions and organizations develop their own measures for their own purposes. Berge and Huang (2004) admit that clarity on this topic is "complex and problematic", but they do provide some three succinct definitions which are consistent with SFU's perspective on this topic:

***Retention** – Continued student participation in a learning event to completion, which in higher education could be a course, program, institution or system.*

***Attrition** – Decline in the number of students from the beginning to the end of the course, program, institution or system.*

***Persistence** – The result of students' decisions to continue their participation in the learning event.*

Persistence and Retention:

Levitz, Noel and Richter (1999) define **persistence** as an *individual* performance indicator and **retention** as an *institutional* performance measure. Measuring student persistence requires knowledge of the student's academic goals or intentions, whereas measuring an institution's student retention rate requires the collective measurement of student persistence.

While SFU does not know the specific intentions of each and every one of its students, the university acknowledges that students enroll with a variety of intentions: Some do not intend to complete a degree (Hoyt and Winn call these students "**opt-outs**"); some intend to complete their degree over a longer time horizon by taking a reduced

Definitions:

Looking backward from the current term, a student's retention status is defined on the basis of when they last registered at SFU.

Persisters – Students who registered at SFU within the last three terms, but have not yet graduated with a degree.

Opt-Outs – These students leave the institution before completing a degree, consistent with their initial intentions (Hoyt and Winn, 2004). These students are not identified in SFU's information systems.

Stopouts – Students who last registered within the last 4, 5 or 6 terms, but have not yet graduated.

Dropouts – Students who last registered more than 6 terms ago.

Completers – Students who graduated.

course load or “**stopping out**” for one or more terms along the way; others will take the traditional route and complete their degree in four years.

Without the knowledge of our students’ intentions, the meaningfulness and utility of SFU’s existing measures of student retention are imprecise. In recognition of this limitation, *it is recommended that Simon Fraser University consider surveying its incoming and outgoing students to measure each student’s intentions or goals and subsequently measure the extent to which these student intentions and goals are achieved.* Similarly, Grayson and Grayson (2003) suggest that the best predictor of retention is to directly ask our students if they plan to stay or go: “The only factor that probably has a consistent relationship to retention is the expressed intent of students to continue their studies in the coming year.”

Old Versus New Paradigm:

Student retention research has evolved over the years and so have the attitudes and perceptions of the problem. Vincent Tinto (2006) suggests that the old paradigm, “*The student has failed, not the institution*”, has been replaced with the new paradigm, “*The institution has failed; students are victims*”.

STUDENT DIVERSITY

According to Pascarella and Terenzini (1998), “The issue of dramatically increasing student diversity will, we believe, have significant, and perhaps even profound, implications for future research on the impact of college on students.” In addition, Reason (2003) suggests that the changing demographics of the college population will affect how higher education researchers and policy makers view retention in the future and “a thorough understanding of the demographics of higher education is essential to a complete understanding of retention.”

In response to these suggestions, we begin with a look at the diversity of SFU’s student population. Simon Fraser University has a diverse undergraduate student population:

Demographics:

- 43% male, 57% female
- 2% aboriginal (self-identified)
- 34% visible minority (self-identification of baccalaureate graduates)
- 9% international
- 40% primarily speak a language other than English at home
- Average age of registrants is 23; average age of new students is 21

Workload:

- 55% full-time (taking 24 credits or more in the year)
- 10% in co-op
- 58% employed while attending school
- 32% of employed registrants are working more than 20 hours per week

Family/Living Arrangements:

- 47% of fathers and 38% of mothers of SFU students hold a Bachelor’s degree or higher
- 14% of SFU students have dependents
- 65% live at home with their parents
- 8% live in SFU residence
- 59% commute for 30 minutes or longer to attend SFU

For more information on SFU Student Diversity and Demographics Trends, see Appendix A.

STUDENT RETENTION IS MULTI-FACETED

It is important to acknowledge that a number of factors (not readily available in our student systems) likely have an affect on student retention. These factors include, but are not limited to the following:

- Academic and social integration,
- Positive interaction with faculty, staff and other students,
- Student goals and commitment,
- Student orientation,
- First year experience,
- Finances and ability to pay,
- Access to supplemental instruction⁷,
- Academic advising,
- Availability of courses,
- Family responsibilities,
- Employment status and hours of employment,
- Living arrangements,
- Student satisfaction.

While it is beyond the scope of this report to investigate these other factors, Institutional Research and Planning at SFU prepared a report earlier this year to do just that. *Understanding Student Retention at SFU – Why Do Students Leave?*⁸ provides a synthesis of findings from numerous student surveys. Based on the feedback from new and continuing students, baccalaureate graduates and early leavers, the report suggests that SFU might be falling short in a number of the areas listed above and points to areas requiring further research.

THE STATE OF STUDENT RETENTION AT SFU

We now devote the remainder of this report to a descriptive analysis of student retention at SFU. This analysis was conducted using various data sources extracted from SFU's Student Information System (SIMS). An overview of the following SFU student retention topics are presented:

- A. Student Persistence, Degree Completion and Time to Graduation
- B. Dropouts – When Do They Leave?
- C. Stopouts – Do They Return?
- D. Student Retention Comparison: SFU versus Other Institutions

⁷ "Supplemental instruction" involves peer-assisted academic support to students in introductory "gatekeeper" courses, that is, courses with traditionally high failure rates (Lotkowski, V.A., Robbins, S.B., Noeth, R.J. (2004). The Role of Academic and Non-Academic Factors in Improving College Retention. Iowa City, IA: ACT.)

⁸ <http://www.sfu.ca/irp/Students/retention/index.html#retention>

A. STUDENT PERSISTENCE, DEGREE COMPLETION RATES AND TIME TO GRADUATION

The published research on student retention is abundant and provides a useful background and comparative reference for retention research at SFU. In 2003, Robert Reason reviewed a selection of retention research and identified several background variables that might be related to student persistence, including:

- admission scores,
- gender, and
- cumulative grade point average.

Similarly, Pascarella, Duby, Miller & Rahser (1981) found that:

- persisters were younger and had higher secondary school achievement;
- dropouts had low high-school achievement and low 1st year grades.

Vincent Tinto suggests a number of “pre-entry characteristics” will strongly influence student retention rates, including:

- high school grades,
- gender,
- race, and
- age.

Astin (1997) discovered that the following variables account for a significant proportion of the variance in student retention:

- high school grades,
- admission test scores (ACT or SAT),
- student gender, and
- race.

Although SFU does not collect race or social demographics information, we do have readily available data⁹ to enable us to perform our own analyses and draw our own conclusions about student persistence, degree completion rates and time to graduation at SFU:

- High school entrance average,
- Direct versus delayed entry from high school,
- Grade point average from college of transfer,
- Age at admission,
- Gender,
- Faculty at admission,
- International student status,
- Cumulative grade point average,
- Course taking and enrollment patterns.

⁹ SFU's Dynamic Student Retention Reporting Tool, <http://www.sfu.ca/irp/Students/retention/index.html>, is the primary data source used for the analysis presented in this report. Authorized SFU users who do not have access to this tool may request access by contacting Joanne Heslop in Institutional Research and Planning.

High School Entrance Average:

Looking only at those students admitted directly to SFU from a BC secondary school from 1996/97 to 2001/02, we generally find better performance among students admitted with higher admission averages (see **Table 1**). For example:

- Students admitted with higher entrance averages achieve higher degree completion rates and lower dropout and stopout rates.
- In general, the high school students with higher admission averages also achieve higher cumulative GPA's in their first term, after 30 and 60 credits, and upon graduation.
- The elapsed time to graduation shows little variation across admission percentage scores, ranging from just over five years (among graduates admitted above 80%) to just under six years (among graduates admitted below 80).
- Significantly lower rates of poor academic standing (OAP and RTW)¹⁰ were associated with higher entrance averages from high school.

**Table 1: SFU Student Retention by Admission % Score:
Direct Entry Students from BC High Schools Admitted to SFU, 1996/97 to 2001/02**

Admission % Score:	None	40-50	50-60	60-70	70-80	80-90	90-100	Grand Total
# Admitted	77	2	51	2,827	3,159	3,492	1,243	10,851
Retention Status at 2006/07:								
Degree Completer	77%	0%	39%	58%	64%	76%	82%	69%
Persister	4%	0%	18%	5%	5%	5%	4%	5%
Stopout	0%	0%	4%	1%	2%	1%	1%	1%
Dropout	19%	100%	39%	35%	28%	18%	12%	25%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA		1.88	2.43	2.93	3.24	3.63	4.00	3.37
Avg CPGA 1st Term	2.85	2.67	2.03	2.19	2.39	2.87	3.33	2.60
Avg CGPA After 30 Credits	2.88	2.83	2.39	2.44	2.56	2.92	3.34	2.75
Avg CGPA After 60 Credits	2.84	2.42	2.46	2.58	2.68	3.00	3.38	2.86
Avg Graduation GPA	3.03		2.65	2.76	2.84	3.11	3.48	3.01
6-Yr Graduation Rate	47%	0%	31%	44%	48%	57%	61%	51%
Avg Elapsed Terms to Grad	12.6		15.8	15.7	15.5	15.3	15.2	15.4
% OAP Within 2 Yrs of Adm	16.9%	0.0%	58.8%	49.7%	36.3%	15.0%	3.8%	29.2%
% RTW Within 2 Yrs of Adm	3.9%	0.0%	29.4%	20.0%	14.2%	5.1%	0.9%	11.2%

¹⁰ All students begin their studies at SFU in Good Academic Standing. After completing at least nine credits at SFU, the academic standing is reevaluated at the end of each semester. The first time a student's CGPA is below 2.000, he/she is placed "On Academic Probation". Subsequent to being placed OAP, if the student's SemGPA and CGPA fall below 2.00, the student will be Required to Withdraw (RTW).

Direct versus Delayed Entry to University:

Berkner et al (2002) found that students who delay entry into postsecondary education after high school are less likely to earn bachelors degrees. A comparison of direct-entry versus delayed-entry students admitted to SFU from 1996/97 to 2001/02 shows the following (see **Tables 2a, 2b**):

- Degree completion rates of delayed entry students are lower.
- Dropout rates and rates of poor academic standing (OAP and RTW) of delayed entry students are also higher than the rates for direct entry students, even though the admission GPA's of the two groups are similar¹¹.

**Table 2a: SFU Student Retention by Admission % Score (60% or higher):
Direct Entry High School Students Admitted to SFU, 1996/97 to 2001/02**

Admission % Score:	Direct-Entry				Grand Total
	60-70	70-80	80-90	90-100	
# Admitted	2,827	3,159	3,492	1,243	10,721
Retention Status at 2006/07:					
Degree Completer	58%	64%	76%	82%	69%
Persister	5%	5%	5%	4%	5%
Stopout	1%	2%	1%	1%	1%
Dropout	35%	28%	18%	12%	25%
Total	100%	100%	100%	100%	100%
Avg Admission GPA	2.93	3.24	3.63	4.00	3.38
Avg CPGA 1st Term	2.19	2.39	2.87	3.33	2.60
Avg CGPA After 30 Credits	2.44	2.56	2.92	3.34	2.75
Avg CGPA After 60 Credits	2.58	2.68	3.00	3.38	2.86
Avg Graduation GPA	2.76	2.84	3.11	3.48	3.01
6-Yr Graduation Rate	44%	48%	57%	61%	51%
Avg Elapsed Terms to Grad	15.7	15.5	15.3	15.2	15.4
% OAP Within 2 Yrs of Adm	49.7%	36.3%	15.0%	3.8%	29.1%
% RTW Within 2 Yrs of Adm	20.0%	14.2%	5.1%	0.9%	11.2%

**Table 2b: SFU Student Retention by Admission % Score (60% or higher):
Delayed Entry High School Students Admitted to SFU, 1996/97 to 2001/02**

Admission % Score:	Delayed-Entry				Grand Total
	60-70	70-80	80-90	90-100	
# Admitted	377	432	350	98	1,257
Retention Status at 2006/07:					
Degree Completer	49%	53%	54%	55%	52%
Persister	5%	6%	7%	3%	6%
Stopout	2%	1%	2%	1%	2%
Dropout	44%	40%	37%	41%	40%
Total	100%	100%	100%	100%	100%
Avg Admission GPA	2.94	3.24	3.60	4.00	3.31
Avg CPGA 1st Term	2.23	2.35	2.74	3.29	2.50
Avg CGPA After 30 Credits	2.52	2.61	2.90	3.34	2.74
Avg CGPA After 60 Credits	2.65	2.73	3.00	3.36	2.84
Avg Graduation GPA	2.80	2.84	3.13	3.58	2.90
6-Yr Graduation Rate	38%	37%	37%	39%	37%
Avg Elapsed Terms to Grad	14.3	15.1	14.6	14.3	14.7
% OAP Within 2 Yrs of Adm	46.7%	40.5%	21.1%	8.2%	34.4%
% RTW Within 2 Yrs of Adm	19.1%	17.1%	6.9%	1.0%	13.6%

¹¹The average difference in admission scores between direct and delayed-entry students was 1.5 percentage points for the 1996/97 - 2001/02 entry cohorts, but has subsequently grown to a 4 percentage point spread for 2002/03 - 2006/07 cohorts.

Grade Point Average from College of Transfer:

Similar findings to those of high school students are evident in looking at retention indicators by admission GPA among college transfer students admitted to SFU from 1996/97 to 2001/02. **Table 3** shows that students admitted to SFU from BC colleges generally achieve better performance if they enter with higher admission GPA's:

- Students admitted with a higher admission GPA score from a BC college had higher degree completion rates and lower dropout rates.
- College transfer student cumulative GPA's (after the first term, after 30 and 60 credits and, upon graduation) were also consistently higher among those admitted with higher GPA's.
- Lower OAP and RTW rates were also associated with higher admission GPA's from college (see Figure 4).

**Table 3: SFU Student Retention by Admission GPA:
BC College Transfer Students Admitted to SFU from 1996/97 to 2001/02**

Admission GPA Score:	< 2.00	2.00 - 2.50	2.50 - 3.00	3.00 - 3.50	3.50 - 4.00	> 4.00	Grand Total
# Admitted	25	553	3,327	3,771	1,312	147	9,135
Retention Status at 2006/07:							
Degree Completer	68%	62%	68%	77%	79%	82%	73%
Persister	4%	2%	2%	1%	2%	1%	1%
Stopout	8%	1%	1%	1%	0%	1%	1%
Dropout	20%	34%	29%	21%	18%	15%	24%
Total	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA	1.80	2.34	2.79	3.21	3.68	4.09	3.08
Avg CPGA 1st Term	2.90	2.20	2.38	2.74	3.19	3.65	2.66
Avg CGPA After 30 Credits	3.04	2.49	2.62	2.88	3.25	3.66	2.84
Avg CGPA After 60 Credits	3.11	2.60	2.71	2.94	3.28	3.64	2.91
Avg Graduation GPA	3.17	2.65	2.77	2.98	3.31	3.66	2.96
4-Yr Graduation Rate	52%	53%	54%	62%	65%	67%	59%
Avg Elapsed Terms to Grad	11.6	9.5	10.3	10.0	9.8	10.1	10.1
% OAP Within 2 Yrs of Adm	0.0%	39.1%	30.1%	13.9%	4.6%	0.0%	19.7%
% RTW Within 2 Yrs of Adm	4.0%	12.8%	9.4%	3.8%	1.1%	0.0%	6.0%

Age:

Across all admission categories of new students admitted to SFU from 1996/97 to 2001/02, the following student retention patterns were found (see **Table 4**):

- Younger students achieve higher degree completion rates, higher persistence rates and lower dropout rates than older students. This is likely because younger students enter SFU with higher admission averages than older students, but it could also reflect differences in academic goals between younger and older students.

Younger students might be more motivated in completing their credential, given that their credential will give them the greatest potential for increasing their lifetime earnings (Moore et al, 2007). This is consistent with the findings at SFU:

- Average credits loads and degree completion rates were higher for younger students, but
- Younger students also had higher rates of academic difficulty within the first two years of admission to SFU, including academic probation (OAP) and required to withdraw (RTW).

Moore et al (2007) found that non-degree seekers typically enroll for fewer terms and take fewer courses at a time than degree seekers. One hypothesis is that a significant proportion of SFU's older students are non-degree seekers, as supported by the following evidence:

- Compared to younger students, SFU's older student population is taking fewer courses per term (lower credit loads).
- SFU's older students appear to be "dropping out" at significantly higher rates than younger students, despite their low rates of OAP and RTW.

Morris (2007) revealed that SFU students aged 30 and above are substantially more satisfied with their educational experience than younger students. Given their higher satisfaction and good academic performance, the high dropout rate of our older students might in fact be an indicator of a high opt-out rate. These "opt-outs" might be dabbling in courses with no intention of completing a degree; they take the courses they want and they leave¹². Distinguishing opt-outs from dropouts provides further support for the need to identify the academic intentions of our students. If their intentions were known, SFU would be in a better position to provide meaningful measures of our success or failure in helping students achieve their goals.

**Table 4: SFU Student Retention by Age –
All Students Admitted from 1996/97 to 2001/02 (All Admission Categories)**

Age Grp:	<= 19	20 - 24	25 - 34	35+	Total
# Admitted	15,800	8,576	3,563	2,289	30,228
Admission % Score	76.9%	71.9%	73.9%	73.4%	75.0%
Retention Status at 2006/07:					
Degree Completer	69%	58%	36%	17%	58%
Persister	4%	1%	2%	3%	3%
Stopout	1%	1%	1%	2%	1%
Dropout	26%	40%	61%	78%	38%
Total	100%	100%	100%	100%	100%
Average Career Credit Load	7.9	7.5	5.8	3.5	7.2
Average Total Cum. Credits	107	97	72	48	96
30 CrHr Survival Rate (SFU+Tfr)	88.4%	87.1%	77.9%	63.6%	84.9%
% OAP Within 2 Yrs of Adm	26.7%	19.4%	10.4%	4.1%	21.0%
% RTW Within 2 Yrs of Adm	9.8%	5.8%	2.8%	0.7%	7.1%

¹² The student retention database labels a student as a completer only after completing a degree. Therefore, students who complete other credentials (certificate or PDP), and no longer register at SFU, are classified as stopouts or dropouts after completion of a non-degree. Even when accounting for this classification anomaly, older students still have higher dropout (or opt-out) rates.

Gender:

In a recent article in University Affairs, Daniel Drolet (October, 2007), provides evidence that “boys seem to underachieve educationally relative to girls” and suggests a number of different theories as to why this is so. Moore et al (2007) also found that females enroll and complete degrees faster than males; females are likely to complete within five years, while males are still persisting and therefore taking longer to complete. Morris (2007) found that SFU’s male students were more likely to interrupt their studies. The student retention indicators among BC12 direct-entry students admitted to SFU from 1996/97 to 2001/02 at SFU supports these findings (see **Table 5**):

- Female SFU students were admitted with slightly higher admission GPA’s than males.
- Females completed degrees at significantly higher rates (72% of females versus 65% of males had graduated by 2006/07).
- Females had higher six-year graduation rates (55% versus 47%) and required less time, on average, to graduate.
- Despite their higher admission averages and higher degree completion rates, a comparison of graduation GPA’s for males and females suggests no gender gap among degree completers – the change in GPA from admission to graduation is identical for the two groups.
- The rates of OAP and RTW within two years of admission to SFU were higher for males, at 33% and 14% respectively, versus 25% and 9% for females. The academic standing difficulties of male students is also reflected in their higher dropout rates (28% of males versus 22% of females had dropped out by 2006/07).
- Among the BC12 direct-entry cohort of students admitted to SFU in 2000/01, 52% were female and 48% were male. Of those who graduated by 2006/07, 55% were female and 45% were male, suggesting a 3 percentage point drop in the share of males who graduate among their entry cohort¹³.

**Table 5: SFU Student Retention by Gender –
BC12 Direct Entry Students Admitted from 1996/97 to 2001/02**

Gender:	Female	Male	Grand Total
# Admitted	5,671	5,180	10,851
Retention Status at 2006/07:			
Degree Completer	72%	65%	69%
Persister	5%	6%	5%
Stopout	1%	1%	1%
Dropout	22%	28%	25%
Total	100%	100%	100%
Avg Admission GPA	3.38	3.35	3.37
Avg CPGA 1st Term	2.63	2.57	2.60
Avg CGPA After 30 Credits	2.76	2.74	2.75
Avg CGPA After 60 Credits	2.87	2.85	2.86
Avg Graduation GPA	3.02	2.99	3.01
6-Yr Graduation Rate	55%	47%	51%
Avg Elapsed Terms to Grad	15.1	15.8	15.4
% OAP Within 2 Yrs of Adm	25.3%	33.4%	29.2%
% RTW Within 2 Yrs of Adm	8.7%	14.0%	11.2%

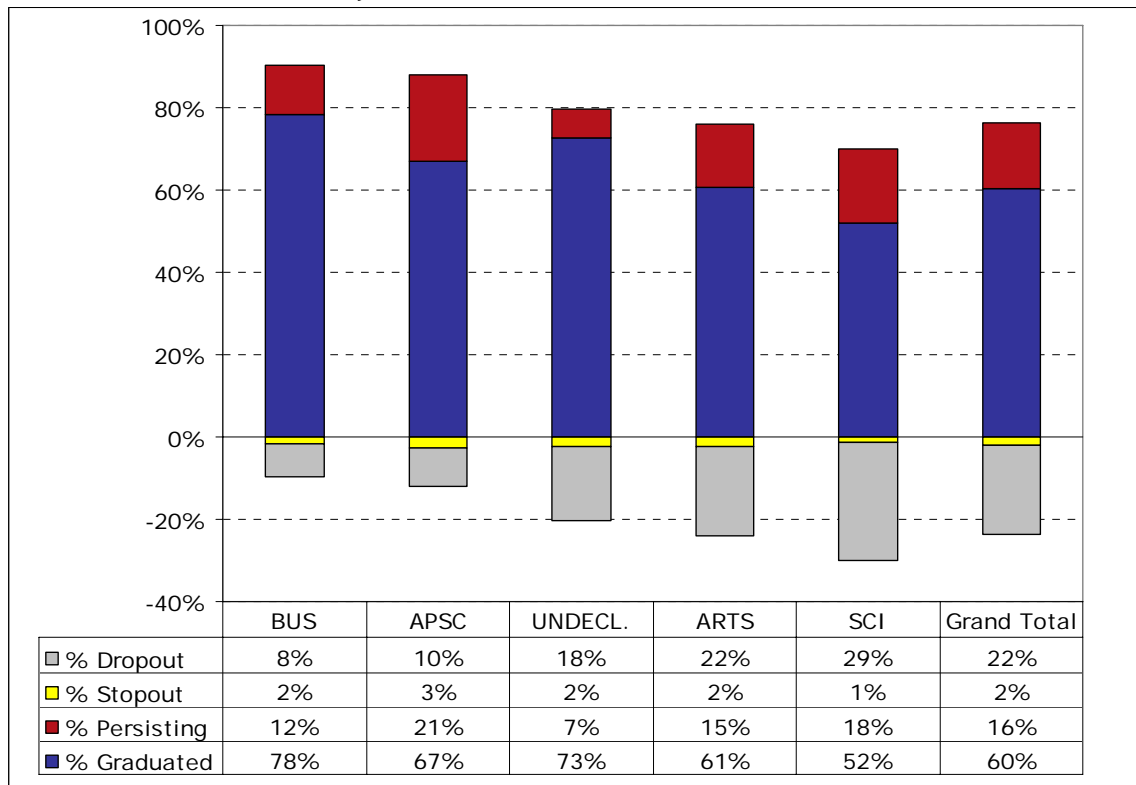
¹³ Drolet (2007) found similar results at University of PEI, reporting a four percentage point drop in the number of males over the course of a postsecondary program, from admission to graduation.

Admission Faculty:

Differences in student retention are evident across the SFU Faculties.¹⁴ **Figure 1** displays the 2006/07 retention status of 1,783 direct-entry BC secondary school students admitted to SFU in fiscal year 2001/02 only, by Faculty at admission¹⁶.

- Students admitted to the Faculty of Business achieved the highest graduation rate (78%) by 2006/07.
- Although the graduation rate of students admitted to the Faculty of Applied Sciences is only 67%, the student persistence rate of this group is relatively high (21%).
- By combining graduation and persistence outcomes (we call these *positive student retention outcomes*), we see that Business and Applied Sciences achieve similar rates of positive student retention (90% and 89% respectively).
- Alternatively, we can create a *negative student retention or attrition indicator* by combining stopout and dropout rates. The chart reveals that 30% of BC12 students admitted to the Faculty of Science and 24% of those admitted to Arts attained negative retention outcomes by 2006/07. This is significantly higher than the 10% attrition outcome of Business students.
- In 2001/02, students could be admitted to an unspecified Faculty¹⁵. While 20% of these undeclared students were not retained, a relatively high proportion (73%) successfully declared a program and graduated; 7% are still persisting.

Figure 1: 2006/07 Student Retention Status by Faculty – BC12 Direct Entry Students Admitted in 2001/02



¹⁴ Each of the Faculties at SFU have different admission requirements and admission GPA averages. Therefore, the Faculty differences in student retention and graduation rates can be largely explained by the distinct admission models.

¹⁵ Currently, students admitted to SFU are normally admitted to a specific Faculty.

A comparison of all direct-entry BC12 students admitted to SFU over a broader time range (1996/97 to 2001/02) reveals the following differences, by SFU Faculty of admission¹⁶ (see **Table 6**):

- Students admitted to the Faculty of Business achieve higher retention rates and degree completion rates than students admitted to other Faculties. This is not surprising, given that the Faculty of Business has the highest admission GPA cut-offs, and therefore, high admission averages¹⁷ and subsequently higher cumulative GPA's and graduation GPA's.
- At 67%, BC12 direct-entry students admitted to the Faculty of Business have the highest six-year graduation rate. By comparison, the six-year graduation rate of the other Faculties range from 48% to 55% (excluding Education with few direct admits).
- The student dropout rate is highest among those admitted to no specific Faculty; dropout rates are also relatively high among students admitted to the Faculties of Science and Arts & Social Sciences. Business has the lowest dropout rate.
- Within two years of admission to SFU, 29% of students are placed on academic probation (OAP) and 11% are required to withdraw (RTW), across all Faculties. These rates range from a high of 36% OAP and 14% RTW in the Faculty of Science to 9% OAP and 3% RTW in Business.¹⁸

Table 6: SFU Student Retention by Faculty of Admission – BC12 Direct Entry Students Admitted from 1996/97 to 2001/02

Faculty of Admission	Applied Sciences	Arts & Soc. Sci.	Business Admin.	Education	Science	Unspec.	Grand Total
# Admitted	1,031	4,938	618	26	3,068	1,170	10,851
Admission Avg (% Score)	85%	76%	84%	77%	75%	78%	78%
Survived 1st Yr & Continued	95%	89%	98%	96%	88%	86%	90%
Survived 2nd Yr & Continued	92%	84%	96%	96%	81%	78%	84%
Retention Status at 2006/07:							
Degree Completer	79%	67%	89%	81%	64%	65%	69%
Persister	6%	6%	4%	0%	6%	1%	5%
Stopout	1%	2%	0%	4%	1%	0%	1%
Dropout	14%	25%	6%	15%	29%	34%	25%
Total	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA	3.70	3.30	3.64	3.31	3.36	3.27	3.37
Avg CPGA 1st Term	3.11	2.52	3.03	2.55	2.54	2.46	2.60
Avg CGPA After 30 Credits	3.14	2.67	3.07	2.64	2.72	2.63	2.75
Avg CGPA After 60 Credits	3.18	2.79	3.12	2.63	2.82	2.74	2.86
Avg Graduation GPA	3.27	2.96	3.17	2.88	2.98	2.89	3.01
6-Yr Graduation Rate	55%	50%	67%	65%	48%	54%	51%
Avg Elapsed Terms to Grad	16.2	15.1	14.5	16.4	15.8	15.4	15.4
% OAP Within 2 Yrs of Adm	11.0%	29.2%	8.6%	19.2%	35.7%	39.1%	29.2%
% RTW Within 2 Yrs of Adm	4.1%	10.4%	3.1%	3.8%	14.4%	16.8%	11.2%

¹⁶ SFU has six Faculties, however, only four accept students to the Faculty during the time-period of this study. The Faculty of Health Sciences is a new Faculty and no retention data is available yet; the Faculty of Education does not generally accept direct-entry BC12 students upon admission to SFU. Unspecified students had no Faculty designation at the time of their admission to SFU.

¹⁷ During the 1996/97 to 2001/02 time period, the admission % average for students admitted to Applied Sciences was higher due to the excess demand for entry into computing and engineering programs. As the demand for these programs fell off, so did the admission averages. The high demand and high admission averages have now shifted to Business Administration, from 2002/03 to present.

¹⁸ During the time range of this study, policies in the Faculties of Business Administration and Applied Sciences restricted returning RTW students from re-enrolling in the Faculty they departed; students were permitted to re-enroll in the Faculty of Arts only. RTW rates are measured against the Faculty to which students were first admitted, but this policy might affect other academic performance measures in FASS.

In the previous table (Table 6), student retention indicators are provided according to the Faculty to which students were admitted, but it is also important to understand that students may switch from one Faculty to another over the course of their studies at SFU. Faculty switching might be a measure of student uncertainty around their academic intentions and may have an impact on student retention.

Some interesting patterns emerge when we look at the extent to which different groups of students switch between Faculties. If we look at all students admitted to SFU from 2000/01 to 2004/05 from all admission categories, the following patterns in Faculty transitions¹⁹ are observed among those who graduated or are still registered at SFU in 2006/07:

- Of this group, 72% never switched faculties.
- The extent to which students remain in their Faculty of admission tends to vary across sub-groups of this cohort. The proportion that *remained* in their entry Faculty is:
 - 68% of degree completers,
 - 74% of BC College Transfer students versus 70% of BC12 direct-entry students,
 - 73% of female students versus 69% of male students,
 - 73% of domestic students versus 61% of international students.
- The Faculty of Business (7%) and the Faculty of Education²⁰ (10%) experience the least amount of switching out of the Faculty, while the Faculty of Science experiences the most (36%).
- In looking at the last Faculty of registration, we see that the Faculty of Education generally attracts its students from other Faculties, with 81% having originated in some other Faculty.
- By comparison, the Faculty of Arts and Social Sciences does not generally attract students once after they have been admitted elsewhere – only 8% of Arts persisters or degree completers originated in some other Faculty.
- The Faculty of Arts and Social Sciences (FASS) provides a significant source of students to other Faculties: 74% of students who are still persisting in Education or completed a degree in Education were originally admitted to the Faculty of Arts and Social Sciences. By comparison, of those still persisting in Business, Applied Sciences or Science the proportions originally admitted to FASS were 44%, 30% and 12% respectively. Note that students who are not admissible to other Faculties are often cascaded into the Faculty of Arts.

¹⁹ SFU's new Faculty of Health Sciences is excluded from this analysis.

²⁰ Note that we are now looking at students admitted under all admission categories (rather than BC12 direct-entry, the focus of Table 6 on the previous page), thus the volume of students admitted to Education is now sufficient for inclusion in the analysis of Faculty switching.

International Students:

Research in Australian higher education finds that international students have lower retention rates than domestic students (van Stolk et al, 2007); and Grayson (2005) found that domestic student GPA’s at selected Canadian universities were higher than GPA’s achieved by international students. How well do international students perform at SFU?

Since the largest group (roughly 50%) of SFU international students are admitted on the basis of their BC College transfer credits, a group of BC College Transfer students admitted to SFU from 1996/97 to 2001/02 was used for a comparison between domestic and international students (see **Table 7a**). Note that students admitted from secondary schools are described on the next page.

- Apart from students admitted with low GPA’s (2.00 to 2.50), SFU international students have higher degree completion rates than domestic students. This is primarily explained by the higher registration persistence of international students – on average, they register in 90% of the elapsed semesters from admission to graduation (versus 82% of the elapsed semesters for domestic students). In other words, international students have fewer stopout terms.
- International students achieve lower first term and cumulative GPA’s at SFU than domestic students, even when controlling for admission GPA. The GPA evidence suggests that international students might have difficulty adjusting to SFU because they suffer a greater “transfer shock”: the GPA decline from admission to the end of their first term is more than half a grade point (0.56), whereas domestic students decline by only 0.42 grade points.
- Although the CGPA’s of domestic and international students do gradually recover over the course of their studies at SFU, the CGPA’s of international students do not improve to the same extent that domestic student CGPA’s do.
- The relatively poor academic performance of international students is also reflected in their higher rates of academic probation (OAP) and required to withdraw (RTW) outcomes.

**Table 7a: SFU Student Retention by Domestic/International Status:
BC College Transfer Students Admitted to SFU from 1996/97 to 2001/02, by Admission GPA**

Admission GPA:	2.00 to 2.50		2.50 to 3.00		3.00 to 3.50		3.50 to 4.00		≥ 4.00		Grand Total	
	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l
# Admitted	538	15	3,169	158	3,497	274	1,175	137	134	13	8,513	597
Retention Status at 2006/07:												
Degree Completer	62%	60%	68%	73%	77%	82%	78%	88%	81%	92%	73%	81%
Persister	2%	0%	2%	0%	1%	1%	2%	1%	1%	0%	2%	1%
Stopout	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%
Dropout	34%	40%	29%	27%	21%	16%	19%	11%	16%	8%	25%	18%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA	2.34	2.36	2.79	2.81	3.21	3.21	3.68	3.70	4.09	4.07	3.08	3.21
Avg CPGA 1st Term	2.21	1.83	2.39	2.24	2.74	2.67	3.21	3.07	3.64	3.69	2.66	2.65
Avg CGPA After 30 Credits	2.49	2.37	2.63	2.48	2.88	2.76	3.28	3.03	3.69	3.32	2.84	2.76
Avg CGPA After 60 Credits	2.60	2.45	2.72	2.58	2.95	2.79	3.31	3.05	3.67	3.29	2.91	2.81
Avg Graduation GPA	2.65	2.52	2.78	2.61	2.99	2.82	3.34	3.06	3.69	3.32	2.96	2.83
60 CrHr Survival Rate (SFU+Tfr)	95%	80%	91%	89%	93%	94%	95%	93%	95%	92%	93%	92%
90 CrHr Survival Rate (SFU+Tfr)	75%	60%	76%	76%	82%	86%	85%	90%	89%	92%	80%	84%
120 CrHr Survival Rate (SFU+Tfr)	66%	60%	71%	73%	79%	84%	80%	88%	84%	92%	75%	82%
Avg Career Credit Load	11.5	9.8	11.9	10.6	8.5	8.2	8.5	8.2	6.0	8.7	7.4	8.7
Avg of % FT over SFU Career	68%	87%	65%	86%	67%	78%	72%	80%	72%	54%	67%	81%
4-Yr Graduation Rate	52%	60%	53%	68%	62%	72%	64%	77%	69%	54%	58%	71%
Avg Elapsed Terms to Grad	9.5	9.3	10.4	8.9	10.1	9.5	9.9	9.3	9.9	11.8	10.1	9.4
Avg Reg'd Terms to Grad	7.7	8.1	8.4	7.9	8.4	8.5	8.3	8.5	8.3	10.3	8.3	8.4
Req/Elapsed Terms	81%	87%	81%	88%	83%	89%	84%	92%	84%	87%	82%	90%
% OAP Within 2 Yrs of Adm	38.7%	53.3%	29.9%	34.8%	13.8%	16.1%	4.2%	8.0%	0.0%	0.0%	19.81%	19.77%
% RTW Within 2 Yrs of Adm	12.1%	40.0%	9.3%	11.4%	3.6%	6.2%	0.9%	2.2%	0.0%	0.0%	5.9%	7.4%

A smaller, although significant source of SFU international students are admitted on the basis of their grade 12 grades. A group of BC12 and Non-BC12 students admitted to SFU from 1996/97 to 2001/02 was used for a comparison between domestic and international students (see **Table 7b**).

- Unlike the international students admitted to SFU from BC Colleges, SFU international students admitted from grade 12 have lower degree completion rates than their domestic counterparts, despite the higher frequency of registrations typical of international students – on average, they register in 89% of the elapsed semesters from admission to graduation (versus 84% of the elapsed semesters for domestic students).
- In general, international students achieve lower first term and cumulative GPA's at SFU than domestic students, even when controlling for admission GPA. These international students admitted from grade 12 might be having greater difficulty adjusting to SFU than the international BC college transfer students, as suggested by their larger transfer shock: The GPA decline from admission to the end of their first term is nearly one full grade point (0.92), whereas college transfer international students (shown previously) decline by only 0.56 grade points and domestic grade 12 students decline by only 0.79 grade points.
- International students admitted to SFU from secondary schools also demonstrate higher rates of academic probation (OAP) and required to withdraw (RTW) outcomes – International (36% OAP and 18% RTW) versus domestic (31% OAP and 12% RTW).

Table 7b: SFU Student Retention by Domestic/International Status: BC and Non-BC Gr. 12 Students Admitted to SFU from 1996/97 to 2001/02, by Admission Score

Admission % Score:	51% to 60%		61% to 70%		71% to 80%		81% to 90%		91% to 100%		Grand Total	
Student Type:	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l	Dom.	Int'l
# Admitted	53	4	3,077	37	3,406	65	3,425	81	1,159	40	11,120	227
Retention Status at 2006/07:												
Degree Completer	43%	50%	56%	35%	62%	60%	73%	67%	78%	65%	65%	59%
Persister	15%	25%	6%	11%	6%	5%	5%	4%	4%	8%	5%	6%
Dropout	2%	0%	1%	0%	2%	2%	1%	1%	1%	5%	1%	2%
Dropout	40%	25%	37%	54%	31%	34%	21%	28%	16%	23%	28%	33%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA	2.44	2.49	2.93	2.92	3.24	3.26	3.63	3.64	4.00	4.06	3.35	3.47
Avg CPGA 1st Term	1.93	1.59	2.18	2.01	2.38	2.40	2.83	2.74	3.28	2.98	2.56	2.54
Avg CGPA After 30 Credits	2.38	2.58	2.44	2.48	2.56	2.67	2.90	2.82	3.32	2.96	2.73	2.76
Avg CGPA After 60 Credits	2.43	2.80	2.59	2.57	2.68	2.79	2.98	2.90	3.36	3.07	2.84	2.87
Avg Graduation GPA	2.64	2.84	2.78	2.61	2.85	2.88	3.11	2.98	3.47	3.21	2.92	2.89
60 CrHr Survival Rate (SFU+Tfr)	64%	75%	69%	46%	74%	69%	84%	74%	88%	83%	77%	70%
90 CrHr Survival Rate (SFU+Tfr)	60%	75%	63%	41%	69%	65%	79%	72%	85%	70%	72%	64%
120 CrHr Survival Rate (SFU+Tfr)	51%	50%	58%	35%	65%	62%	76%	69%	81%	68%	68%	61%
Avg Career Credit Load	6.3	6.5	7.4	6.5	7.6	7.7	8.2	8.5	8.7	8.0	7.8	7.8
Avg of % FT over SFU Career	4%	0%	4%	8%	4%	3%	6%	16%	7%	8%	5%	9%
4-Yr Graduation Rate	2%	0%	8%	5%	9%	23%	12%	21%	13%	23%	10%	19%
5-Yr Graduation Rate	25%	50%	32%	24%	37%	46%	44%	47%	49%	55%	39%	44%
Avg Elapsed Terms to Grad	16.1	13.5	15.7	14.5	15.6	13.6	15.4	14.1	15.3	13.8	15.5	13.9
Avg Reg'd Terms to Grad	13.7	13.0	13.1	12.8	13.0	11.9	13.1	12.3	12.6	12.8	13.0	12.3
Req/Elapsed Terms	85%	96%	83%	88%	83%	87%	85%	88%	82%	93%	84%	89%
% OAP Within 2 Yrs of Adm	64.2%	25.0%	50.1%	56.8%	37.4%	38.5%	15.9%	29.6%	4.7%	25.0%	31.0%	35.7%
% RTW Within 2 Yrs of Adm	28.3%	25.0%	20.2%	27.0%	14.9%	20.0%	5.6%	13.6%	1.1%	15.0%	12.1%	18.1%

Cumulative Grade Point Average:

The cumulative GPA obtained in the first term at university proved to be a significant variable in numerous student retention studies, especially when looking at student retention between years one and two. Murtaugh, Burns and Schuster (1999) found that the probability of returning for a second year of college increased dramatically with higher GPA's. In their study, students with the lowest GPA (0.0 to 2.0) had a 57% probability of being retained, while students with the highest GPAs (3.3-4.0) had a 92% probability of being retained. For each point increase in GPA, the probability of withdrawal from the university decreased by 49%.

Among BC12 direct-entry students admitted to SFU from 1996/97 to 2001/02, higher cumulative GPA's at the end of the first term at SFU are associated with more positive student retention indicators (see **Table 8**):

- Only 59% of those with CGPA's below 2.00 were retained beyond the first year. Students achieving cumulative GPA's above 2.00 have much higher survival rates, ranging from 92% for those within 2.00 to 2.33 versus 98% for those with CGPA's at 4.00 or higher. Note that SFU's academic standing policy influences the retention rate of students with CGPA's below 2.00.²¹
- Students with lower CGPA's generally took fewer credits in their first term than those with higher CGPA's. More analysis of first term credit loads is addressed later in this report.
- Compared to students with a low CGPA at the end of their first term at SFU, students with higher first-term CGPA's achieved lower dropout rates, higher long-run cumulative GPA's, higher degree completion rates and lower rates of OAP and RTW.

Table 8: SFU Student Retention by First Term Cumulative GPA – BC12 Direct Entry Students Admitted from 1996/97 to 2001/02

	2.00	2.33	2.67	3.00	3.33	3.67	4.00	Grand	
First Term CGPA:	< 2.00	- 2.33	-2.67	- 3.00	- 3.33	- 3.67	- 4.00	- 4.33	Total
# Admitted	1,663	1,753	2,064	1,992	1,727	871	122	659	10,851
% Female	46%	50%	55%	57%	53%	52%	60%	47%	52%
Average of 1st Term Credit Load	9.9	10.8	11.6	11.9	12.1	12.9	11.5	13.6	11.6
Survived 1st Yr & Continued	59%	92%	96%	96%	96%	97%	94%	98%	90%
Survived 2nd Yr & Continued	50%	82%	90%	91%	93%	94%	90%	96%	84%
Retention Status at 2006/07:									
Degree Completer	31%	63%	72%	77%	81%	85%	82%	86%	69%
Persister	5%	6%	5%	5%	5%	4%	4%	5%	5%
Stopout	2%	2%	1%	1%	1%	1%	1%	1%	1%
Dropout	62%	29%	21%	17%	13%	10%	13%	8%	25%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA	3.13	3.18	3.27	3.39	3.53	3.69	3.67	3.83	3.37
Avg CPGA 1st Term	1.35	2.17	2.49	2.80	3.14	3.47	3.67	3.92	2.60
Avg CGPA After 30 Credits	2.14	2.32	2.52	2.76	3.03	3.33	3.44	3.76	2.75
Avg CGPA After 60 Credits	2.40	2.48	2.64	2.83	3.05	3.32	3.41	3.71	2.86
Avg Graduation GPA	2.61	2.70	2.82	2.97	3.14	3.37	3.43	3.70	3.01
6-Yr Graduation Rate	23%	48%	53%	58%	59%	65%	65%	64%	51%
Avg Elapsed Terms to Grad	16.3	15.6	15.5	15.3	15.2	15.1	14.9	15.1	15.4
% OAP Within 2 Yrs of Adm	95.6%	50.9%	22.2%	7.6%	3.2%	0.9%	4.9%	0.5%	29.2%
% RTW Within 2 Yrs of Adm	48.8%	14.5%	4.8%	1.8%	0.9%	0.0%	0.8%	0.2%	11.2%

²¹ <http://students.sfu.ca/forms/GASaC.pdf>

Course Taking and Enrollment Patterns:

Driscoll (2007) found that the number of courses that college students took in their first semester was associated with higher persistence rates from Fall to Spring and higher grades in the first semester²². This might be a college phenomenon because only a weak relationship was found among SFU BC12 direct-entry students admitted to SFU in the Fall terms over the last decade (1996/97 to 2006/07).

- As the credit loads among SFU students in their first term increased, the Fall to Spring persistence rates and cumulative GPA's in the first term also increased, but the relationship was quite weak ($R^2 = 0.29$). A multiple regression analysis would be required to investigate this further, especially given the relatively strong relationship between admission GPA's and first term credit loads - students with higher admission GPA's also took on a higher course load.
- The difference in persistence rates and first term academic performance was greatest among those who took just one course (three or fewer credits) versus those who took more than one course.
- We also looked at students who took a full-time load (12 or more credits) versus a part-time load (fewer than 12 credits) in the first term and found a 0.44 GPA spread between full-timers (2.73) and part-timers (2.29) in their first term; and a two percentage point spread in the first-term and first-year persistence rates.
- The higher student persistence and higher GPA's of full-time first-year students might be related to some of the other findings from recent surveys. Morris (2007) found that full-time first-year SFU students are more satisfied with their decision to attend SFU, more involved in campus activities, easily make new friends, have a better sense of belonging and feel that SFU has met their expectations.

Moore et al (2007) found that students who accumulated twenty-credits or more in their first year achieved higher graduation rates. While data for such a study could be obtained, we do have other readily available data that we can look at instead - the accumulated credits in the first term. Using ten credits as a cutoff, we find the following:

- Using the 1996/97 BC12 direct-entry cohort, we found that 68% had subsequently graduated by Spring 2007. (This is close to SFU's typical long-run graduation rate of 70%, thus we are fairly confident that the majority who will ultimately graduate have been included.)
- Among this entire entry cohort, we found that 68% had completed ten or more credits in their first term at SFU.
- By the Spring of 2007, we found a larger share of graduates (73%) than non-graduates (55%) had completed ten or more credits in their first term.
- The eighteen percentage point difference suggests that a higher credit load in the first term is associated with higher degree completion rates over a ten-year period.

Moore et al (2007) also found that maintaining continuous enrollment without stopping out resulted in higher completion rates. Evidence suggests that this is likely true at SFU, however, the extent of the effect cannot be determined without further analysis over the long-run, to isolate continuous enrollees who graduated from continuous enrollees who never graduated.

²² In Driscoll's study, these were "transfer-eligible" college courses.

B. DROPOUTS – WHEN DO THEY LEAVE?

Published research consistently finds that the majority of students who drop out of post-secondary institutions leave between the first and second year. In other words, when we look at all the students classified as dropouts, which is about 30% of a typical direct-entry BC12 cohort over the long run, we will find that the majority of these students left the university between the first and second year.

- Among 2,079 direct-entry students admitted to SFU from BC secondary schools in 2000/01, 21.5% (or 447 students) subsequently "dropped out" by 2006/07²³. These students left SFU before completing a credential and did not register in the last six terms; 43% left within their first year (within the first three terms of admission to SFU).²⁴

Levitz, Noel and Richter suggest that attrition rates reduce by half in each of the subsequent years in which the student is retained. The situation at SFU roughly follows this pattern:

- 43% of dropouts left within their first year of admission to SFU,
- 22% left by the end of the 2nd year,
- 16% left by the end of the 3rd year,
- 13% by the end of the 4th year, and
- 6% by the end of the 5th year²⁵.

Strategies to Boost Retention Rates:

Strategy 1: Levitz (1999) suggests that the "most efficient way to boost graduation rates" is to retain students past the first year by offering intervention strategies to students at risk of dropping out. If an institution can reduce its initial attrition rate, then this will effectively reduce the attrition rate in subsequent years and ultimately reduce the overall attrition rate for the institution (Levitz, Noel and Richter, 1999).

SFU data can be used to illustrate the potential benefit of such a strategy:

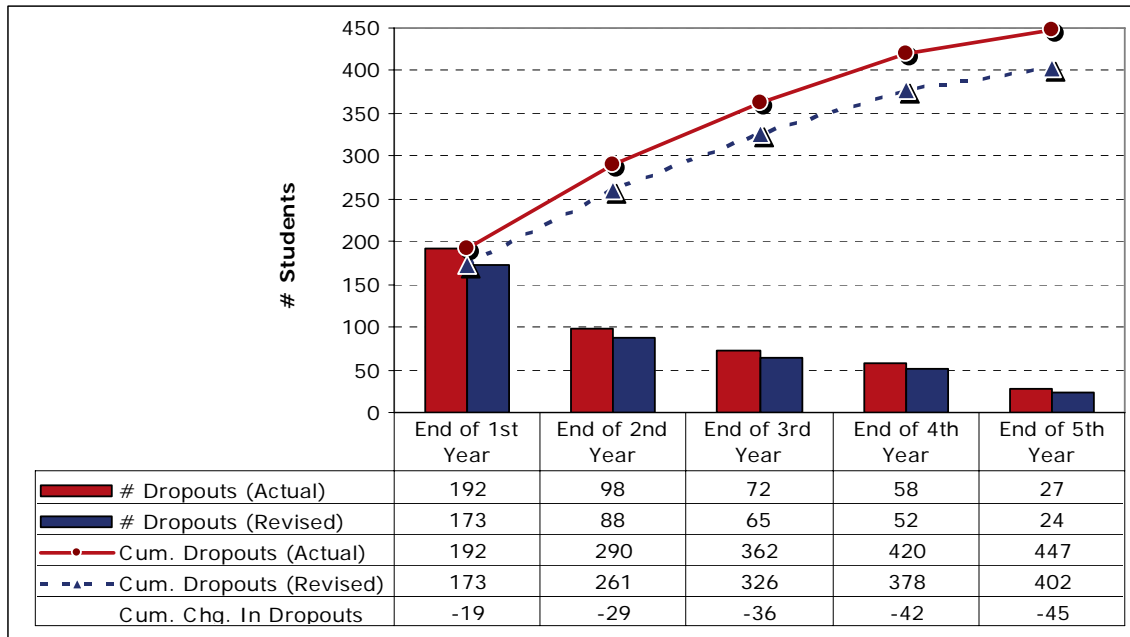
- Earlier we found that 447 out of 2,079 students admitted to SFU in 2000/01 had subsequently dropped out within five years of admission, of which 192 left SFU in their first year.
- If SFU successfully reduced the number of first-year dropouts by 10% (or 19 fewer) to 173, then the university would benefit from a cumulative 10% reduction (or 45 fewer dropouts) over the five-year period. This assumes that the additional students successfully retained in the first year, do not succumb to their fate and drop out later. In other words, this model assumes the attrition rates in subsequent years remain unchanged (see **Figure 2**).

²³ By 2011/12, it is expected that the dropout rate of the 2001/02 entry cohort will reach roughly 30% or the average long-run dropout rate of a BC12 direct-entry cohort.

²⁴ Tinto (1996) reported that approximately 57% of college dropouts leave before the start of the second year.

²⁵ First year dropouts include those who dropped out within the first three elapsed terms since admission to SFU; 2nd year dropouts left in term 4, 5 or 6, 3rd year dropouts left in term 7, 8 or 9; 4th year dropouts left in term 10, 11 or 12 and 5th year dropouts left between the 13th and 15th term since admission to SFU.

Figure 2: Cumulative Effect of a 10% Reduction in the Number of First Year Dropouts on Student Retention of 2000/01 BC12 Direct Entry Cohort



Strategy 2: An alternate strategy for reducing attrition rates is to focus on attrition rates in the second year or later. Again, we use the 2000/01 BC12 direct entry cohort to illustrate.

- For this particular cohort, the cumulative number of dropouts (447) over the five years is 2.33 times the number of first-year dropouts (192). We will call this the *five-year attrition multiplier*.
- Reducing the five-year attrition multiplier will lead to further reductions to the university’s five-year attrition rate. Let’s assume that SFU successfully developed intervention strategies to retain students at risk of dropping out in their second year or later, such that the five-year attrition multiplier was reduced by roughly 10% from 2.33 to 2.10. This alone would result in a reduction of 10% (or 44 fewer students²⁶) who dropped out over the five year period.

Strategy 3: The largest reduction in attrition rates will involve the use of the first two strategies – reducing first-year attrition rates and reducing the five-year attrition multiplier.

- The combined effect of a 10% reduction in the number of first-year dropouts and a 10% reduction in the five-year attrition multiplier from 2.33 to 2.10 will result in 84 fewer dropouts (or nearly 19%) over the five year period.²⁷ Again, this assumes that the additional students successfully retained earlier in the model, do not simply delay their decision to drop out.

²⁶ Reduction in cumulative number of dropouts over five years due to reduction in attrition multiplier only = $(192 \times 2.33) - (192 \times 2.10) = 447 - 403 = 44$.

²⁷ Reduction in cumulative number of dropouts over five years due to combined effect of reducing first-year attrition rate by 10% and reducing the attrition multiplier by 10% = $(192 \times 2.33) - (173 \times 2.10) = 447 - 363 = 84$.

C. STOPOUTS – DO THEY RETURN?

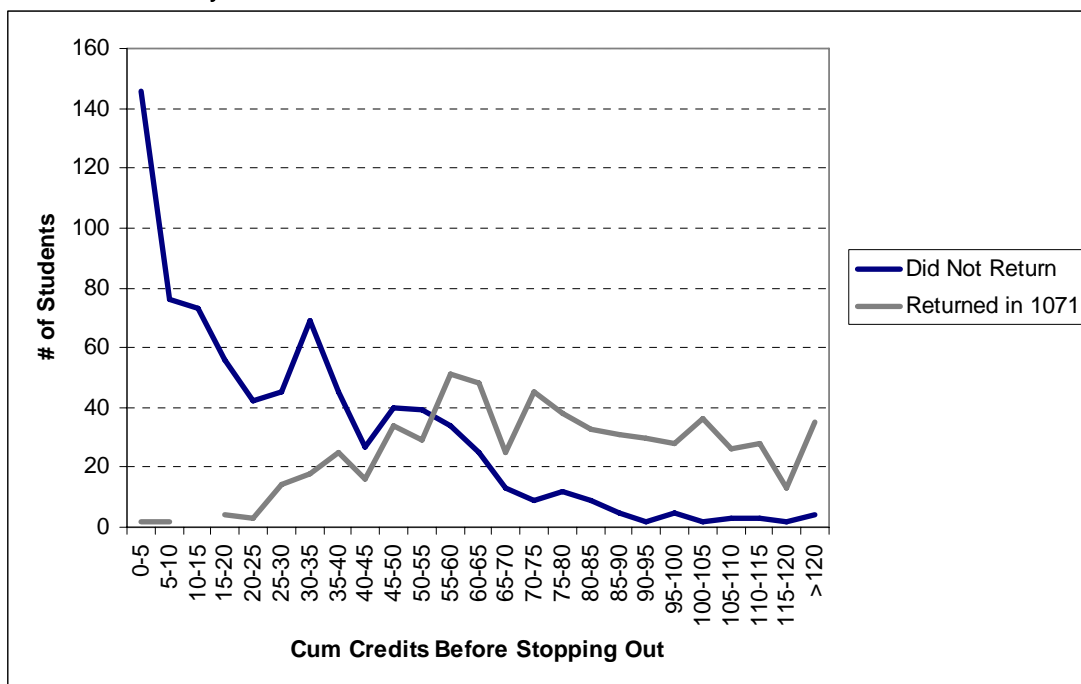
SFU offers a flexible degree program structure to allow students to stop out from their studies for one or more terms and return to SFU in a later term. Compared to students at other Canadian universities, SFU students are more likely to interrupt their studies; they primarily stopout for employment, travel, financial or family reasons (Morris, 2007).

Is a longer period of stopping out associated with lower credit accumulation prior to stopout? We can answer this question by analyzing 1,400 recent stopouts from the cohort of BC12 direct entry students admitted to SFU from 2000/01 to 2004/05 (and who had not yet completed a degree by 2006/07). These students logged a stopout term in the Fall of 2006 (term 1067). Then, in the following term, the Spring of 2007 (term 1071), we identified whether the stopouts had subsequently returned to SFU. The duration of the recent stopouts ranged from one term to several years, depending upon when the stopout was initiated.

- The majority of stopouts (78%) had not registered at SFU for one to six terms – these are the short-term stopouts.
- The remainder (22%) were longer-term stopouts – they had not registered for more than six terms in a row.
- The rate at which stopouts returned to SFU in Spring 2007 was higher among short-term stopouts (54%) than long-term stopouts (9%).
- The accumulated credits upon return to SFU was higher for short-term stopouts (returning with 77 credits, on average), compared with 28 credits, on average among long-term stopouts who returned to SFU.

Does the accumulation of more credits before stopping out increase the likelihood that students will return to their studies at a later date? Using the same cohort above, we find that stopouts with more credits were more likely to return than those with few credits (see **Figure 3**).

Figure 3: Cumulative Credits at the Time of Stopout vs. Spring 2007 Registration Status – BC12 Direct Entry Cohort Admitted to SFU from 2000/01 to 2004/05



D. STUDENT RETENTION COMPARISON: SFU VERSUS OTHER INSTITUTIONS

Canadian Comprehensive Universities:

A convenient source of student retention information is the Maclean’s annual ranking of Canadian universities. In the November 19, 2007 issue, Maclean’s reported the year 1 to year 2 student retention rate. This is the percentage of first-time, full-time, first-year undergraduate students enrolled in the 2005 fall term who returned to the institution in the following year (2006). SFU ranked 4th out of eleven comprehensive universities²⁸ with an 88.0% year 1 to year 2 retention rate (an improvement over 85.1% or 9th place reported in the previous year’s magazine edition)²⁹. SFU’s retention rate currently ranks above the rate reported by the University of Victoria (86.3%), but lags behind the retention leader in this university category (Guelph, 91.3%). See **Figure 4**.

Figure 4: Macleans 2007 Year 1 to Year 2 Student Retention Rates – Canadian Comprehensive Universities

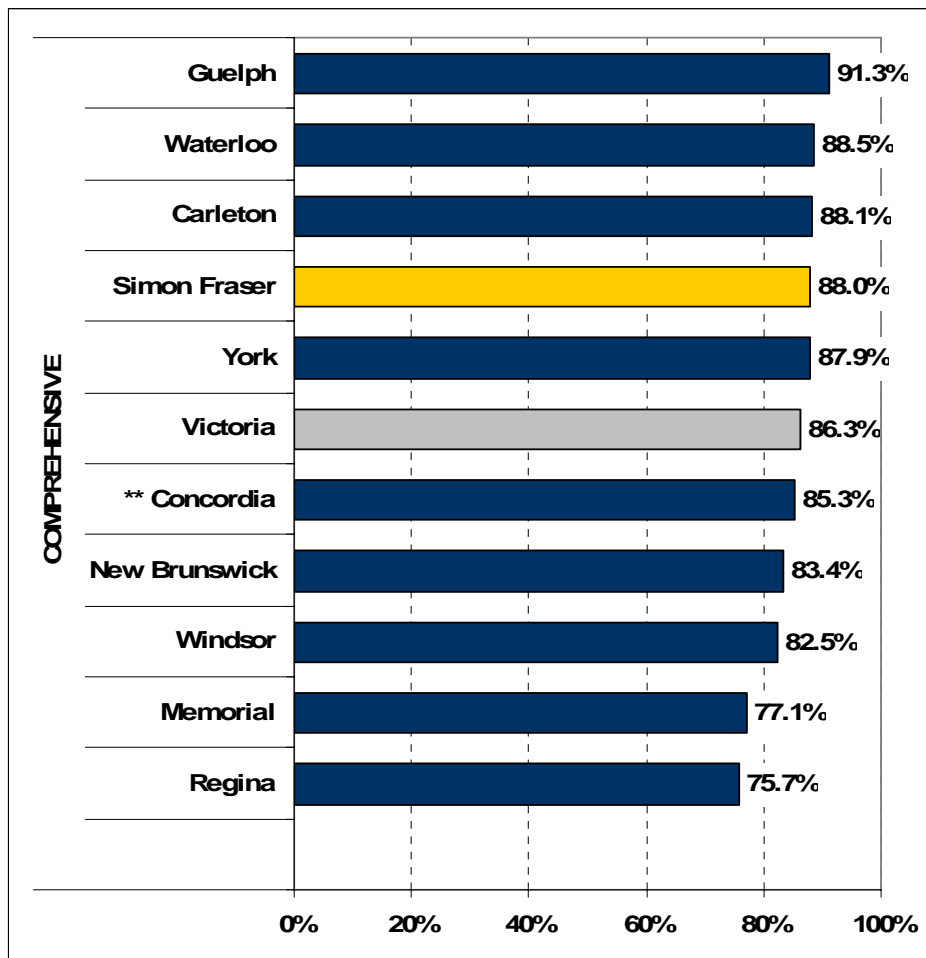


Chart notes:

- a) Percentage of full-time, first-year students enrolled in Fall 2005 who returned to university the following year (2006).
- b) ** denotes institutions reporting % of first year students in 2003 who returned in 2004.

²⁸ Universities in the comprehensive category have a significant amount of research activity and a wide range of programs at the undergraduate and graduate levels, including professional degrees

²⁹ Given that retention rates among institutions in SFU’s category are similar, natural fluctuations in the retention rate can change the rank significantly.

Canadian Medical/Doctoral Universities:

Macleans also reports and ranks the year 1 to year 2 student retention rates of Medical/Doctoral universities in Canada. Medical Doctoral universities offer a broad range of Ph.D. programs and research; all universities in this category have medical schools. The only BC university in this category is the University of British Columbia (UBC), reporting the same retention rate as SFU (88.0%), but ranking 8th in its category of fifteen institutions. See Figure 5.

Figure 5: Macleans 2007 Year 1 to Year 2 Student Retention Rates – Canadian Medical/Doctoral Universities

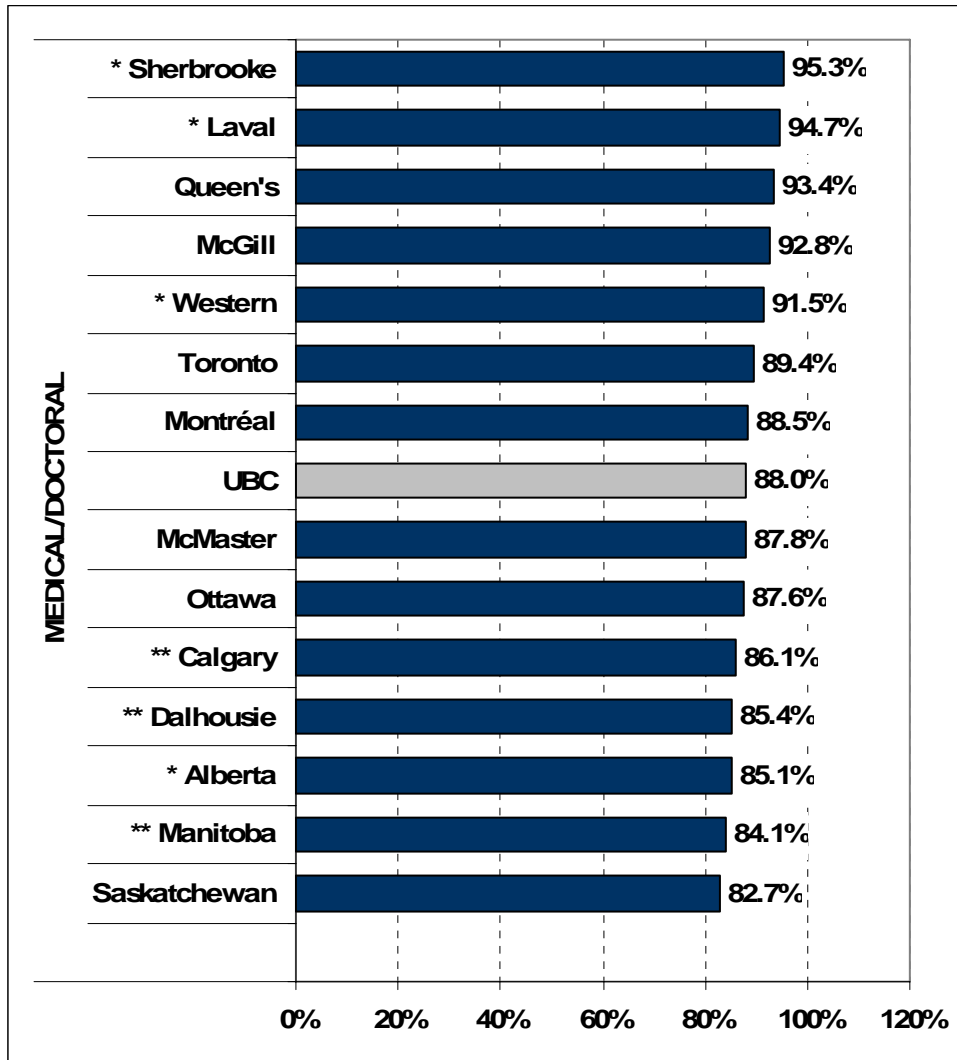


Chart notes:

- a) Percentage of full-time, first-year students enrolled in Fall 2005 who returned to university the following year (2006).
- b) * denotes institutions reporting % of first-year students in 2004 who returned in 2005.
- c) ** denotes institutions reporting % of first year students in 2003 who returned in 2004.

Canadian Primarily Undergraduate Universities:

The third Macleans grouping of Canadian universities is primarily undergraduate institutions. The universities in this category are largely focused on undergraduate education, with relatively few graduate programs. The only BC university in this category is the University of Northern British Columbia (UNBC), reporting a retention rate of 73.3% and ranking 18th in its category of twenty-one institutions. See Figure 6.

Figure 6: Macleans 2007 Year 1 to Year 2 Student Retention Rates – Canadian Primarily Undergraduate Universities

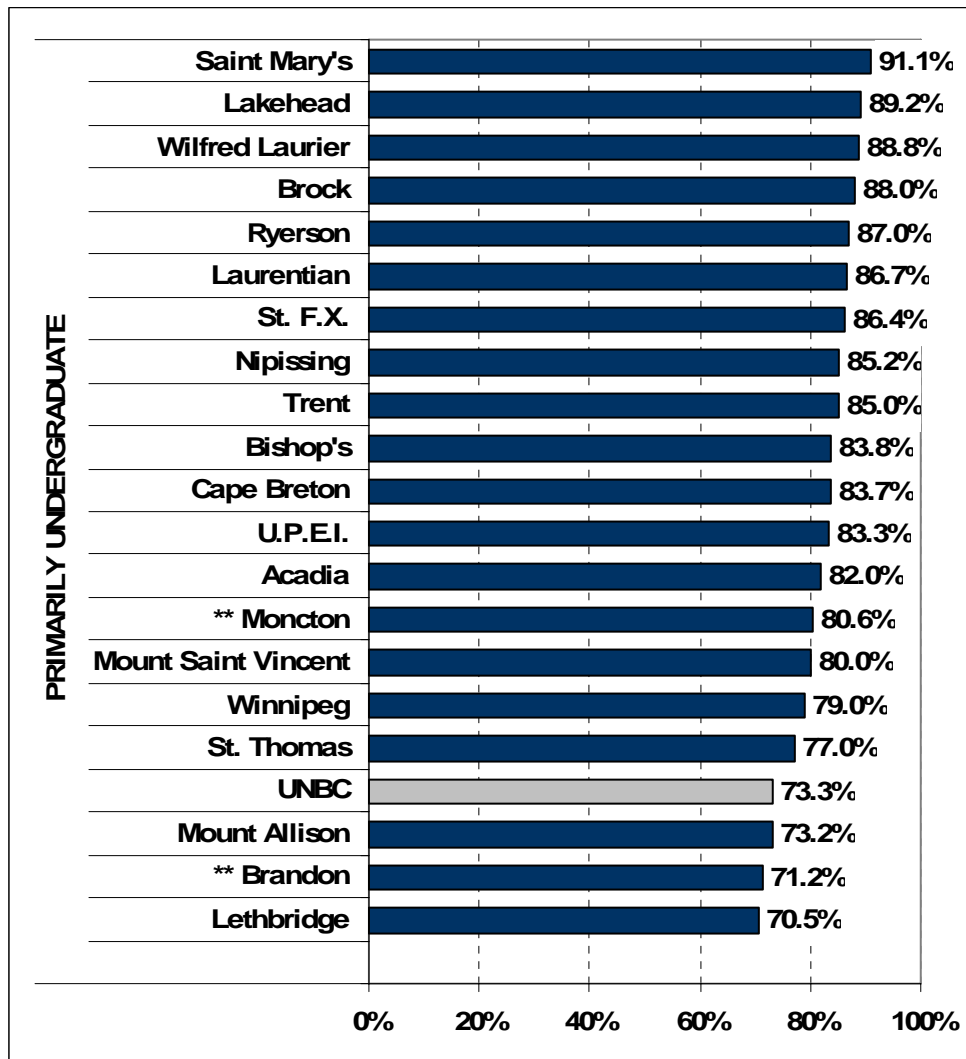


Chart notes:

- a) Percentage of full-time, first-year students enrolled in Fall 2005 who returned to university the following year (2006).
- b) ** denotes institutions reporting % of first year students in 2003 who returned in 2004.

Relative to the other BC universities (UVic, UBC and UNBC), Simon Fraser fared well on the student retention indicator reported in the Macleans rankings this year. Despite placing second overall³⁰ in the comprehensive category, SFU tied for 12th place out of all 39 Canadian institutions on the student retention indicator. There is ample room for improvement if SFU wants to attain the top retention rates (93%) achieved by Queen’s and McGill.

US Ivy League Institutions:

While not directly comparable to Simon Fraser, it is interesting to compare SFU’s retention rate with the retention rates of Ivy League institutions in the United States. The Ivy League institutions include eight private institutions of higher education located in the Northeastern United States. These institutions are known for their academic excellence, selectivity in admissions, and a reputation for social elitism. All of the Ivy institutions place near the top in the U.S. News & World Report college and university rankings³¹. As shown in Table 10, the retention rates of all eight Ivy League institutions are 97% or higher.

Table 10: Retention rates of Ivy League Institutions

Ivy League Comparison Group: AY 2006-07	
1	Yale University (New Haven, CT) 99
2	Dartmouth College (Hanover, NH) 98
3	Stanford University (Stanford, CA) 98
4	Harvard University (Cambridge, MA) 98
5	University of Pennsylvania (Philadelphia, PA) 98
6	Brown University (Providence, RI) 97
7	Cornell University-Endowed Colleges (Ithaca, NY) 97
8	Columbia University in The City of New York (New York, NY) 97

a) Retention rates for the Ivy League institutions are available from the Integrated Post-Secondary Education Dataset (IPEDS) via <https://data.agb.org/benchmarking/ranking.cfm?uuid=51786CE3-C59E-09F5-E07DB8C673AB97DD#>.

b) The IPEDS retention rate is the percent of the Fall full-time cohort (minus exclusions from the Fall full-time cohort) that re-enrolled at the institution as either full- or part-time students in Fall of the subsequent year. The year of the data on this site reflects the returning year. The 2006-07 data shows the retention rate of full-time students returning in Fall of 2006-07.

³⁰ Student retention rates were not included in the overall score. This year, Maclean’s revised its methodology, and the rankings are now based entirely on publicly available data. Student retention rates are not publicly available at all Canadian institutions, although BC universities are now reporting this information in the BC Higher Education Accountability Dataset (BC HEADset) available at www.bcheadset.ca.

³¹ http://en.wikipedia.org/wiki/Ivy_League

CONCLUSION AND RECOMMENDATIONS

This report has revealed that SFU has a diverse student population and student retention efforts need to be tailored to the special needs of each specific target group. Similar to other published Canadian or American student retention research, this report has shown that better student retention outcomes are generally associated with the following factors or student features:

- Higher admission GPA's,
- Admission direct from high school (as opposed to delayed-entry),
- Female,
- Admission at a younger age,
- Domestic student status (rather than international),
- Admission to the Faculty of Business,
- Higher cumulative GPA's in the first term,
- Full-time credit load,
- Maintaining a continuous enrollment with few or no stopouts.

In light of these findings, the following recommendations are proposed for consideration by the Retention Planning Group at SFU as this group develops and implements a plan to improve student retention at Simon Fraser University.

- 1) Target recruitment and admission efforts to attract well-qualified students. More selective recruitment and admissions would increase the chances of better retention outcomes, including:
 - Higher cumulative CGPA's at SFU,
 - Higher degree completion rates,
 - Lower rates of poor academic standing (OAP and RTW).

- 2) Offer **student retention initiatives and intervention programs** to groups of registered SFU students who are at high risk of early departure, including:
 - Students admitted with lower GPA's,
 - Students who delayed their entry to university after graduating from high school,
 - Male students,
 - Non-traditional or older students,
 - International students,
 - Selected students at risk of early departure admitted to Science or Arts and Social Sciences,
 - Undeclared students, or those without a major,
 - Students who achieve low CGPA's in their first term at SFU,
 - Part-time students,
 - Students who stop out or take a break from their studies.

- 3) Conduct personalized questionnaires with incoming, continuing and outgoing students to capture: (a) their academic intentions or goals, (b) their subsequent changes to their academic plans and (c) the extent to which their intentions or goals are achieved upon SFU departure. The information collected in personalized questionnaires would provide a more accurate distinction between opt-outs, stopouts and dropouts and could ultimately lead to improved student retention rates, purely through a more accurate labeling of student intentions and outcomes. The benefit of this suggestion must also be

weighed against the possible perception of students that revealing their true intentions might limit their access to specific programs and courses they wish to take.

- 4) Since new students to SFU frequently experience “entry shock” or “transfer shock”, further research is required to understand the ways in which this occurs and the factors that lead to a decline in GPA from admission to the end of the first timer. Consider tailoring orientation programs to specific student groups to help minimize the shock. Such target groups might include:
 - Direct-entry, delayed-entry or non-BC secondary school students,
 - International students from various regions of the world,
 - College transfer students,
 - University transfer students,
 - Mature students or “non-traditional” students,
 - Part-time students,
 - Male students, female students,
 - Scholarship students,
 - Bursary students,
 - Employed students,
 - Students admitted at the margin or near GPA cut-offs.

- 5) Conduct additional analyses to determine the early warning levels (such as low midterm grades or low CGPA levels with low credit accumulation) to identify students at high risk of dropping out. Offer early intervention programs to help these students maintain a good academic standing and to continue successfully in their program. Early intervention might occur at selected time periods, such as:
 - After mid-term exams,
 - At the end of the first term of registration at SFU,
 - Upon the first stopout period or term of non-registration ,
 - After subsequent SFU registration terms when CGPA’s reach low levels.

- 6) Encourage students to declare an academic program appropriate to their interests and goals; assist students in defining a plan to meet the requirements of the program.

- 7) Encourage and assist students in maintaining continuous enrollment, thus reducing the chances of stopout and non-continuance.

- 8) Focus student retention efforts on first-year students such that SFU increases the chances of retaining more students in the first year and ultimately reducing the attrition rate in subsequent years and overall.

- 9) Given that students who stop out with low cumulative credits are at high risk of not returning, conduct further analysis to determine the most effective credit level at which intervention techniques could minimize the risk of dropping out.

APPENDIX A: SFU STUDENT DIVERSITY AND DEMOGRAPHIC TRENDS

Student Diversity: Recent student surveys and other SFU sources suggest that that Simon Fraser University has a diverse undergraduate student population:

Demographics

- 43% male, 57% female,^(g)
- 2% aboriginal,^(a)
- 34% of baccalaureate graduates self-identify as a visible minority,^(k)
- 9% of registrants are international,⁽ⁱ⁾
- 40% primarily speak a language other than English at home,^(d)
- Average age of registrants is 23; average age of new students is 21.^(g)

Workload

- 55% of registrants are full-time (taking 24 credits or more in the year),^(g)
- 10% of registrants are co-op students,^(b)
- 58% of registrants are employed while attending school,^(a)
- 32% of employed registrants are working more than 20 hours per week; 13% are working more than 30 hours per week.^(a)

Family/Living Arrangements

- 47% of fathers and 38% of mothers of registered SFU students have a Bachelor's degree or higher,^(c)
- 14% of students have dependents,^(c)
- 65% live at home with their parents,^(c)
- 8% live in SFU residence,^(c)
- 59% commute for 30 minutes or longer to attend classes at SFU.^(c)

Enrollment Growth: With 17,740 undergraduate FTE's in 2006/07, SFU is planning to expand to 22,200 undergraduate FTE's by 2014/15^(e). This represents a planned growth rate of 25% over the next eight years.

New Student Intake: SFU admits roughly 6,300 new undergraduate students per year, an increase of nearly 30% in the last decade from 4,900 students in 1996/97^(j).

In light of the plans for enrollment growth, the number of new students admitted to SFU will need to increase over the next decade; the extent of this increase will largely depend on SFU's ability to retain its existing students through to degree completion.

Basis of Admission: The two primary admission categories for admission to SFU are BC Grade 12 (BC12) and BC College Transfer (BCCOL). In 2006/07, roughly 2,700 (or 42%) of new students were BC12 admits and 2,000 (or 32%) were BCCOL. The remaining categories of new students represent about 1,500 (or 26%) of new students^(j).

Of those students admitted from BC High Schools, the vast majority are admitted from school districts in the lower mainland (91%).

Over the last decade, the share of students admitted to SFU from BC high schools has increased, while the share of students who transferred from a BC College has declined. A significant decline in college transfer students has been felt in just the past three years.

Age: On average, new students admitted to SFU in 2006/07 were age 21. The overall average age of new students fluctuates with the mix of new students by basis of admission. As the share of college transfer students declines, the average age of new students has been declining from a high of 23 in 1998/99 to the ten-year low of 21.

A steady decline in the mean age of registered undergraduate students is evident, declining from a mean of 25.6 in 1990 to 22.8 in Fall of 2006^(f).

Gender: Among new students admitted to SFU over the past decade, 42% were male and 58% were female. This is roughly consistent with the current distribution of males and females among the registered undergraduate student population in 2006/07 (43% male and 57% female)^(h).

The gender distribution within each of SFU's six faculties tends to vary: New students to the Faculty of Education are primarily female (77%), whereas the share of females new to the Faculty of Applied Sciences is only 42%.

International: New international students to SFU represent roughly 10% of the new student intake. This is double the 5% share of ten years ago^(e). The Faculty of Business Administration attracts the largest share of international students, averaging 20% over the past five years, with a high of 28% in 2003/04.

In 2006/07, sixty-one different countries were represented among the new international

students admitted to SFU. The top 3 countries of origin, accounting for 57% of SFU international undergraduates, include China (38% of new international students), Korea (11%) and Hong Kong (8%).⁽ⁱ⁾

Full-Time/Part-Time: Among new students admitted to SFU, just under half register for a full-time course load in their first term at SFU (twelve or more credits).

New students admitted from BC high schools are much more likely to register for a full-time load (68%) versus college transfer students in their first term at SFU (26% full-time).

The proportion who register full-time in their first term also varies by Faculty, with 40% of Arts and Social Sciences students registering full-time in their first term, versus 49% of Science students, 64% of Business Administration and 68% of Applied Sciences.

Among all registered students in 2006/07, 55% were full-time (taking 24 credits or more in the year).^(j)

(a) SFU Undergraduate Student Survey, Fall 2006, <http://www.sfu.ca/irp/surveys/ugss/documents/ugss2006report.pdf>.

(b) Student Participation in Co-operative Education at SFU, <http://www.sfu.ca/irp/Students/documents/d27b.pdf>.

(c) SFU Undergraduate Student Survey, Fall 2005, <http://www.sfu.ca/irp/surveys/ugss/documents/ugss2005report.pdf>.

(d) SFU Undergraduate Student Survey, Fall 2003, <http://www.sfu.ca/irp/surveys/ugss/documents/ugss2003report.pdf>.

(e) Simon Fraser Enrollment Plan, April 12, 2007, <http://www.sfu.ca/irp/planning/documents/SFUEnrolPlan.pdf>.

(f) Undergraduate Students by Age, with Full-Time/Part-Time Status, <http://www.sfu.ca/irp/Students/documents/d20.xls>.

(g) Undergrad Headcounts by FT/PT, Gender, Faculty and Year, <http://www.sfu.ca/irp/Students/documents/d07.xls>.

(h) Dynamic Student Retention Reporting Tool, <http://www.sfu.ca/irp/Students/retention/restricted/DynamicRetentionAt1071.xls>.

(i) Fall International Visa Student Report, http://www.sfu.ca/irp/Students/visa_report/documents/visa.report.1067.pdf.

(j) New Undergraduate Students by Basis of Admission, <http://www.sfu.ca/irp/Students/documents/d11.pdf>.

(k) 2006 Survey of 2004 Baccalaureate Graduates, http://www.tupc.bc.ca/student_outcomes/publications/graduate_outcomes/graduate_followup_survey_2006/index.html.

REFERENCES:

- AGB Benchmarking Service, Integrated Post-Secondary Education Dataset (IPEDS) *Retention Rates*.
<https://data.agb.org/benchmarking/ranking.cfm?uid=51786CE3-C59E-09F5-E07DB8C673AB97DD#>.
- Astin, A. W. (1997). *How 'Good' is Your Institution's Retention Rate?* Research in Higher Education, 38, 647-658.
- Berge, Z. and Huang, Y.P. (2004). *A Model for Sustainable Student Retention: A Holistic Perspective on the*
- Berkner, L., He, S., and Cataldi, E.F. (2002). *Descriptive Summary of 1995-96 Beginning Postsecondary Students: Six Years Later*. Washington, DC: National Center for Education Statistics.
- Student Dropout Problem with Special Attention to e-Learning*. DEOSNEWS, Volume 13 – Issue 5
- Driscoll, Anne K. (2007). *Beyond Access: How the First Semester Matters for Community College Students' Aspirations and Persistence*. Pace Policy Brief 07-2, August 2007.
- Drolet, Daniel. (2007). *Minding the Gender Gap*. University Affairs, Vol 48, No. 8, October 2007.
- Grayson, Paul J. (2005). *The Experiences and Outcomes of Domestic and International Students at UBC, York, McGill, and Dalhousie*. <http://www.yorku.ca/yorkint/global/conference/canada/papers/Paul-Grayson.pdf>
- Grayson, Paul J. and Grayson, Kyle (2003). *Research on Retention and Attrition*. Canada Millennium Scholarship Foundation.
- Hoyt, Jeff E. and Wynn, Bradley A. (2004). *Understanding Retention and College Student Bodies: Differences Between Drop-Outs, Stop-Outs, Opt-Outs, and Transfer-Outs*. NASPA Journal, Vol. 41, no. 3, 395-417.
- Levitz, R.S., Noel, L., and Richter, B.J. (1999). *Strategic Moves for Retention Success*. New Directions for Higher Education, no. 108, Winter 1999, 31-49.
- Maclean's Magazine (2007). *17th Annual University Rankings*. Maclean's Magazine, November 19, 2007.
- Moore, Colleen, Shulock, N., Ceja, M. and Lang, D. (2007). *Beyond the Open Door: Increasing Student Success in the California Community Colleges*. Institute for Higher Education Leadership and Policy, California State University, Sacramento, August, 2007.
- Morris, Daniel (2007). *Understanding Student Retention at SFU: Why are Students Leaving SFU?* Institutional Research and Planning, Simon Fraser University.
http://www.sfu.ca/irp/Students/documents/understanding_retention_rpt_2.pdf
- Murtaugh, P.A., Burns, L.D. and Schuster, J. (1999). *Predicting the Retention of University Students*. Research in Higher Education, 40, 355-371.
- Pascarella, Ernest T. and Terenzini, Patrick T. (1998). *Studying College Students in the 21st Century: Meeting New Challenges*. The Review of Higher Education, 21.2, 151-165.
- Pell Institute for the Study of Opportunity in Higher Education (2007). *Demography is Not Destiny: Increasing the Graduation Rates of Low-Income College Students at Large Public Universities*.
- Reason, Robert D. (2003). *Student Variables that Predict Retention: Recent Research and New Developments*. NASPA Journal, Vol. 40, no. 4, 172-191.
- Tinto, Vincent (2006). *Research and Practice of Student Retention: What's Next?* Journal of College Student Retention: Research, Theory & Practice 8(1), pp. 1-19 (EJ728877). (Filed).
- van Stolk, Christian, Tiessen, J., Clift, J. and Levitt, R. (2007). RAND Corporation Technical Report. *Student Retention in Higher Education Courses: International Comparison*.