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Go Abroad and Graduate On-Time: Study Abroad Participation, Degree Completion, and Time-to-Degree

Heather Barclay Hamir
University of Nebraska-Lincoln, barclayhamir@gmail.com

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by

Heather Barclay Hamir

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Heather Barclay Hamir, Ph.D.

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Adviser: Larry L. Dlugosh

Over the last four decades, participation in postsecondary education has grown, yet degree completion rates have not risen at a proportional rate (Bound, Lovenheim & Turner, 2009; National Center for Educational Statistics, 2008; Turner, 2004) and the length of time to graduation is increasing (Tinto, 1993; Turner). At the same time, the benefits of degree completion for the individual and society are well documented (McMahon, 2009). Significant research since the 1970s explored factors related to student retention and attrition in an effort to understand and intervene in these processes. Building on Astin's (1984) Theory of Student Involvement, Kuh and associates (2005) investigated practices and activities employed by institutions to promote student engagement using degree completion as a measure of institutional success. Study abroad is among these practices.

Using a mixed-methods approach, this study examined degree completion rates and time-to-degree for the 2002 entering cohort of first-time-in-college freshmen at The University of Texas at Austin (7,845 individuals). Rates were compared for three groups of students: students who had participated in a study abroad program (participants), students who applied but did not participate (applicants), and students who did not apply to participate or study abroad (non-participants). Applicants were included to

approximate the motivational factors which may distinguish study abroad participants from non-participants.

Results indicated that study abroad participants graduated at higher rates than either applicants or non-participants, and that participation increased the predicted probability of graduating in five years by 64% and in six years by 202%. In addition, time-to-degree was slightly shorter for participants when compared to all non-participants, although the effect size was small. No significant difference existed in the predicted time-to-degree of participants and non-participants. Analyses of degree completion rates and differences in time-to-degree between participants based on program type, length, and classification at the time of participation also yielded multiple significant results. Interviews with alumni from this cohort provided greater insight into factors which influence or inhibit study abroad participation at the university.

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Chapter 1

Introduction

The rate at which students enter higher education has increased substantially over the last 40 years (National Center for Educational Statistics (NCES), 2008; Turner, 2004). Between 1960 and 2006, matriculation of high school graduates increased by over 20% (NCES), and the population of matriculated students became more diverse in terms of race/ethnicity and socio-economic status (Carey, 2004; Turner). Despite the significant increase in enrollment, actual degree attainment rates have not increased in tandem, and average time-to-degree is increasing (Tinto, 1993; Turner). Turner found that the proportion of individuals receiving a bachelor's degree by age twenty-three rose 1% from 1970 to 1999, while the proportion of those who had attended some college in that interval increased by 16%, reflecting a net decrease in five-year college completion rates (p.13). Other studies of matriculated students at four-year institutions have found that on average, only 45% graduate within six years. These rates are disproportionately lower for African American, Hispanic, low socio-economic status, and male students (Astin, Tsui, & Avalos, 1996; Tinto).

Low degree completion rates and increasing time-to-degree have led to demands for transparency in higher education from the public and the government. Students and parents want to know that enrollment will lead to graduation and the benefits associated with degree attainment, while state and federal governments want to ensure that public funds are invested in an effective higher educational system. The interests of all parties have prompted increasing research on attrition and retention in higher education and the development of new perspectives on factors impacting degree completion rates.

A significant body of research demonstrates that student involvement during college, whether academic or co-curricular, increases the likelihood that students will persist to graduation (Tinto, 1993; Astin, 1984; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005). Variously described as integration (Tinto), involvement (Astin), and engagement (Kuh et al.), the fundamental concept is one of individual student investment in his or her own educational experience which in turn strengthens the student's commitment to persist at the institution. It is in the best interest of institutions to foster student participation in activities which lead to student engagement, and of students to pursue opportunities which can contribute to the likelihood of degree attainment. The question is: which activities do so?

Recent research indicates that study abroad participation is among the activities that contribute to student persistence (Young, 2008) and engagement (Kuh et al, 2005). Study abroad participation is known to benefit students in multiple ways, such as second language acquisition (Carlson, Burn, Useem, & Yachimowicz, 1990; Segalowitz, Freed, Collentine, Lafford, Lazar, & Diaz-Campos, 2004; Vande Berg, Connor-Linton, & Paige, 2009; Vera, Howard, & Lemee, 2009); international interest or "world-mindedness" (Braskamp, Braskamp & Merrill, 2009; Carlson et al, 1991; Carlson & Widaman, 1988; Sutton & Rubin, 2004); and personal growth (Dwyer, 2004; Dwyer & Norris, 2005), among others. The bulk of this research has focused on how students change or develop as a result of participation. While invaluable, there is a real need to expand research on study abroad into areas that demonstrate how participation affects students on more concrete measures of college success, such as time-to-degree, academic performance, degree completion, and career impact.

Two reports illustrate the timeliness of this research. A 2008 survey by the American Council on Education indicated that 55% of college-bound students were "certain or fairly certain" they would study abroad in college, an increase from survey results eight years prior (p.1). Yet annual data compiled by the Institute of International Education (IIE) indicates that, though increasing, only 10% of graduates from four-year institutions actually participated (Bhandari & Chow, 2009). Multiple factors impact the decision to study abroad, with cost and concerns about degree progression among the most common. This gap between intention and actualization of plans to study abroad demonstrates the continuing place of this endeavor at the margins of students' academic experience. The increasing emphasis on transparency and accountability of institutions with respect to graduation rates presents an opportunity to evaluate how engaging activities such as study abroad may contribute to the success of our institutions and our students on this measure.

Purpose Statement

Higher education institutions must identify ways to retain and graduate more students. Research demonstrates that activities such as study abroad engage students in their educational environment and contributed to increased retention and graduation rates than at similar institutions (Kuh et al., 2005). Significant proportions of high school seniors are interested in study abroad, and data from the National Survey of Student Engagement (ned) indicate that this is true of entering freshman at The University of Texas at Austin (UT Austin) as well. Among freshmen entering in fall 2010, 56% reported that they plan to study abroad, while an additional 26% were undecided about participation (NSSE, 2010). However, participation rates remain low compared to

overall enrollments at UT and in the U.S., and research consistently shows that students perceive participation could or will delay graduation (Carlson et al, 1990; Booker, 2001; Kasravi, 2009; Lucas, 2009; Shirley, 2006). While students who choose to participate may determine that this is not the case or is less important to them than the benefits incurred, many more students are not willing to take this chance. Concrete data on degree completion rates and time-to-degree between participants and non-participants is the most effective way to address this concern.

To determine if a relationship exists between study abroad and degree completion, graduation rates were analyzed among full-time, first-time-in-college (FTIC) students in the 2002 entering cohort at UT Austin who studied abroad (participants) and those who did not (non-participants). Because study abroad is almost exclusively an optional academic activity, a third group of students who applied to, but did not participate in, study abroad programs (applicants) were included in order to approximate the motivational factor demonstrated by study abroad participants. The study consisted of three main areas of inquiry. First, whether a correlation exists between study abroad participation and degree completion overall, when examined based on demographic variables, and when participants are compared based on program length, type, and class standing at the time of participation. Second, whether a correlation exists between study abroad participation and time-to-degree overall, when examined based on demographic variables, and when participants are compared based on program length, type, and class standing at the time of participation. Third, interviews with graduates from this cohort provided insights into the perceived value of study abroad and the influences and barriers that led to the decision to participate or not participate while at UT.

Research Questions

To gain a better understanding of how study abroad participation affects degree completion rates and time-to-degree, this study investigated the following research questions:

1. Does a relationship exist between study abroad participation and degree completion?
    a. Do degree completion rates differ between study abroad participants, applicants, and non-participants?
    b. Do degree completion rates differ for the target groups when compared by students' gender, race/ethnicity, SAT composite score, GPA at sophomore standing, and college?
    c. Do degree completion rates differ among study abroad participants based on the type of program in which they participated, length of participation, or classification (class standing) at the time of participation?
2. Does a relationship exist between study abroad participation and time-to-degree?
    a. Does time-to-degree differ between study abroad participants, applicants, and non-participants?
    b. Does time-to-degree differ for the target groups when compared by students' gender, race/ethnicity, SAT composite score, GPA at sophomore standing, and college?
    c. Does time-to-degree differ among study abroad participants based on the type of program in which they participated, length of participation, or classification at the time of participation?

3. How do alumni from the cohort in question perceive the value of study abroad and factors which influence or inhibit study abroad participation at UT Austin?

Definition of Terms

The following definitions are provided to clarify the underlying assumptions made through the use of specific terms in this study:

1. *Affiliate (study abroad) program (also referred to as a third party provider program)*: a study abroad program organized by an outside entity with which the university affiliates in order to offer the program to students.
2. *Approved (study abroad) program:* a program which the university officially offers to students and which is memorialized through an affiliation contract with a third party study abroad program provider, or through an exchange agreement with a university abroad. Approved programs guarantee that students will receive credit for all coursework taken in the program, allow students to maintain continuous enrollment while abroad, and allow federal, state, and institutional financial aid to apply toward program costs.
3. *Attrition:* "Attrition refers to students who fail to reenroll at an institution in consecutive semesters" (Berger & Lyon, 2005, p.7).
4. *Cumulative Grade Point Average (GPA):* "The cumulative University grade point average for an undergraduate [at The University of Texas at Austin] includes all work undertaken at the University for which a letter grade is recorded, including credit by examination, correspondence, and extension. A course in which a symbol, rather than a grade, is recorded is not included. Credit hours transferred from another institution are not included" (Registrar Services, n.d.).

5. *Degree completion (or degree attainment):* Receipt of a baccalaureate degree from the institution.
6. *Race/Ethnicity:* "Categories used to describe groups to which individuals belong, identify with, or belong in the eyes of the community. The categories do not denote scientific definitions of anthropological origins" (NCES, n.d.). For the 2002 entering cohort, categories were: White, Native American, African American, Asian American, Hispanic, Foreign, Unknown.
7. *Exchange program:* a study abroad program in which students spend one or more terms enrolled at a host institution abroad, usually in regular university courses alongside students of the host institution. Students pay home institution tuition and receive home institution credit. Programs are typically one or two semesters in length, with few summer exchange options.
8. *Faculty-led program:* a study abroad program in which a faculty member of the home institution teaches students in an international setting. Students may take one or all courses from the home institution faculty member, with additional courses provided by instructors abroad. Programs are most commonly offered during the summer, and typically enroll only UT students.
9. *First-time-in-college (FTIC) student cohort:* "Includes first-time in college new students who are full-time (enrolled for 12 or more hours) and in a degree-seeking program. First-time in college fall entrants… includes both those students enrolled in college for the first time in the fall semester, or for the first time in the prior summer semester and continuing into the fall. This definition of 'first-time in college' is consistent with data reported to the federal government via the Integrated

Postsecondary Education Data System (IPEDS). The FTIC cohort includes students with the following modes of admission: Texas High School, Out-of-State High School, Individual Approval, Provisional/CAP Admission, and Summer Freshman Admits" (Information Management and Analysis (IMA), 2008).

10. *Persistence:* "Persistence refers to the desire and action of a student to stay within the system of higher education from beginning year through degree completion" (Berger & Lyon, p.7).
11. *Retention:* "Retention refers to the ability of an institution to retain a student from admission to the university through graduation" (Berger & Lyon, p.7).
12. *Retention rate:* "A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage. For four-year institutions, this is the percentage of first-time bachelors (or equivalent) degree-seeking undergraduates from the previous fall who are again enrolled in the current fall" (NCES, n.d.).
13. *Study abroad:* "Arrangement by which a student completes part of the college program studying in another country. Can be at a campus abroad or through a cooperative agreement with some other U.S. college or an institution of another country" (NCES, n.d.).
14. *Third-party provider program*: see *affiliate program* above.
15. *Time to degree*: The length of time in semesters or years for an individual to complete a baccalaureate degree.

Assumptions

This study includes the following assumptions based on conventions at the university or in the field of education abroad.

1. The definitions of terms provided above accurately reflect the measures used in the study.
2. Data retrieved from the university and Study Abroad Office systems were accurate and complete.
3. The different characteristics of study abroad students, notably higher GPA requirements to participate than to graduate from the institution and motivational factors, were mitigated by: a) comparing groups of students by GPA to account for the effect of GPA on degree completion rates, and b) including students who applied but did not participate in a program as a control group with similar demonstrated interest in study abroad as the participant group.
4. The majority of students in this cohort who studied abroad participated in UT approved programs. The small number of students who may have studied abroad through programs which were not approved at the university, and therefore not recorded in the data, did not have a statistically significant affect on degree completion rates for the non-participant group.

De-limitations and Limitations

De-limitations

This study includes several de-limiting factors which may prevent the results from being applicable to a broad range of institutional situations.

1. Each FTIC student cohort at UT Austin has been shaped by H.B. 588, commonly known as "the top 10% law", since 1998. The top 10% law guarantees admission to the state college or university of their choice to graduating high school seniors in the top 10% of their class. H.B. 588 reserved up to 90% of admissions slots for qualified

Texas residents in the 2002 student cohort, with the remaining 10% comprised of Texas students with class ranks below the top 10%, out-of-state students, and international students. This law made UT Austin admissions both unselective for qualified students and highly selective for other categories of students. The unique characteristics of the admissions process since 1998 in turn create unique entering student cohorts and generate results which may not be generally applicable to student cohorts at other institutions.

2. Eligibility criteria for study abroad and program offerings are institution-specific. Eligibility criteria at other institutions may be more or less restrictive. Similarly, the portfolio of programs offered at other institutions is likely to consist of a different mixture of program options which may be more or less attractive to students than UT Austin's options are to its students.

Limitations

This study also contains a limitation due to the methodology used. Socio-economic status could not be measured through the datasets available, and research does indicate that socio-economic status influences student retention (Cabrera, Burkum, & LaNasa, 2005). Inclusion of GPA ranges was intended to help offset this limitation as retention for all socio-economic status groups increases as GPA increases, reflecting the relational nature of these two variables due to the influence of socio-economic status on educational preparation prior to college.

Significance of the Study

Universities, individuals, and state and federal governments have a vested interest in improved degree completion rates. Activities which can positively contribute to

retention and graduation rates are worthy of further exploration, and study abroad has been identified in this category (Kuh et al, 2005). However, the student perception that study abroad delays graduation creates a barrier to participation that must be addressed if this activity is to attract a broader range of participants. More concrete data is necessary to assess the relationship between study abroad, time-to-degree, and degree completion.

At an institutional level, a positive correlation would indicate another means to promote student engagement at the university, which in turn increases the likelihood of degree completion (Kuh et al; Tinto, 1993). This could create new possibilities for engaging and retaining at risk students, such as men, students with lower GPAs, and students from some minority groups. Addressing the perception that study abroad delays graduation would be critical as this is an issue of particular concern for underrepresented populations in study abroad, particularly for students of color and men.

In contrast, a negative correlation between study abroad participation and degree completion or time-to-degree would point to needed work on university campuses. Numerous benefits to study abroad participation have already been identified, reducing the potential severity of any consequences if participation correlated to *lower* degree completion rates or longer time-to-degree. It could, however, indicate that students need better guidance and planning in order to participate and graduate, and that institutional barriers or programs that are poorly articulated with academic degrees could lead to delayed or reduced likelihood of graduation.

Chapter 2

Review of the Literature

Ensuring that students who matriculate at higher education institutions persist to graduation has been an area of prolific research and attention for several decades. A significant body of research identifies factors that contribute to student attrition and retention and expands our understanding of at-risk students and possible interventions to assist them. Identification of these factors in turn led to theory formation and the development of frameworks within which institutions can affect the experience of students in ways that increase retention and degree completion. While no single activity or practice within higher education can significantly change retention rates, additional research on each activity known to contribute to retention can assist institutions in improving degree completion rates for a broad range of students. Kuh et al. (2005) identify study abroad participation as an enriching educational experience linked to higher rates of degree completion, although little research has been conducted on this connection. Toward this end, the following literature review will focus on: the benefits of improved retention and degree completion rates and current trends in those rates; factors which affect student attrition and retention; and theories which explain why students depart or remain. Subsequent sections provide data on study abroad participation, outcomes of participation and how study abroad may contribute to the overarching goal of higher education to retain and graduate students.

Benefits of Improved Retention and Degree Completion Rates

Degree completion has numerous benefits for society and the individual, the effects of which lead to public investment in higher education institutions. At a societal

level, benefits of educational attainment include lower crime rates; lower welfare, medical, and prison costs; and a more stable society and government (McMahon, 2009). Baum and Ma (2007) found that "adults with higher levels of education are less likely to depend on social safety-net programs, generating decreased demand on public budgets" (p. 2). Turner (2004) observed that when degree completion rates are low, or graduation is delayed, the production of skilled workers in the economy is reduced (p.14), which results in lower spending and tax revenue. Failure to move matriculated students through the educational system to degree completion impacts not only the individual, but society as a whole in important ways.

Individual benefits are intertwined with societal benefits of educational attainment. The most immediate and significant benefit is the wage premium associated with degree completion (McMahon, 2009; Turner, 2004; Baum & Ma, 2007; Bound, Lovenheim, & Turner, 2009). According to McMahon, "[c]ollege graduates are earning 70% more than high school graduates, a number that has increased dramatically since 1970" (p.252). Not surprisingly, educational attainment is negatively correlated with rates of poverty and unemployed (McMahon; Baum & Ma). Non-monetary benefits of higher levels of education attainment include better health of the individual and his or her children; increased longevity; lower infant mortality rates; likelihood of children attending college; happiness (McMahon, 2009); and easier access to more prestigious positions in society (Pascarella and Terenzini, 2005).

At an institutional level, graduation rates are often seen as a measure of the success of the institution (Astin, 1996). Low completion rates negatively impact public confidence in higher educational institutions and institutional enrollment management

and budgetary stability (Braxton, Hirschy, & McClendon, 2004). Time-to-degree is similarly viewed as a measure of success: "[i]mplicitly, the opportunity cost of extended time to degree...is that other students may be denied college opportunities" (Turner, p.14), while the cost to educate a single student increases. Federal and state governments provide financial support to postsecondary institutions with the expectation that matriculated students will graduate; low and delayed completion rates necessarily mean wasted tax dollars when evaluated in this light. Such concerns led to the Student Right-to-Know and Campus Security Act in 1990, which "requires colleges to reveal their graduation rates to enable prospective applicants to make a more informed decision regarding the suitability of the institution" (Hagedorn, 2005, p.94) and have continued in the decades since.

The impact on individuals and society of greater educational attainment illustrates the multidimensional benefits provided by degree completion. The wage premium attained by graduating from college has led to increasing enrollments in higher education since the 1970s, yet degree completion rates have remained lower than expected. The next section reviews current data on degree completion rates and time-to-degree in the U.S.

Degree Completion and Time-to-Degree

Over the last four decades, increasing numbers of high school graduates have entered the higher education system, yet the degree completion rate has not increased at a parallel rate. Researchers agree that the degree completion rate remains low, while disagreeing on what that rate actually is or how best to calculate it. Research by Astin et al. (1996) and Tinto (1993) indicate that roughly 45% of students entering four-year

institutions graduate with a bachelor's degree within six years. Astin's study of degree completion rates at 365 baccalaureate institutions examined nine year graduation rates as well, and found that degree completion rates increased by less than one percent over the additional three years, from 44.9% to 45.7% (p.3). In contrast, Adelman's (2004) research on the graduating high school classes of 1972, 1982, and 1992 suggests that bachelor's degree completion rates may be significantly higher when individuals in the entire postsecondary educational system are tracked versus the attrition and degree completion rates of a single institution. His research found that for all three high school classes, 45-49% of individuals with 10 or more postsecondary credits had earned their bachelor's degree within 10 years of high school graduation (p.18). When this group of individuals is further divided into those who earned more than 10 credits and had any credits from a four-year institution, the bachelor's degree completion rate rises to 66%-67% by age 30 for the classes of 1972 and 1982, or age 26-27 for the class of 1992 (p.18). Berkner, He, and Cataldi (2002) found that 53% of students who began their postsecondary studies in 1995-1996 with the goal of attaining a bachelor's degree had received their degree six years later (p.11). Of those who had attained a bachelor's degree, 21% had transferred at some point in their academic careers (p.29).

While estimates of the overall degree completion rate vary, research consistently demonstrates that time-to-degree has increased over the last four decades (Turner, 2004; Adelman, 2004). In the 1960s and 1970s, over 50% of individuals with a bachelor's degree graduated by age 22. This proportion dropped below 40% by the year 2000, indicating that more individuals took longer to complete their degrees (Turner, p.24). According to Adelman, average time to degree has increased from 4.34 calendar years for

individuals who graduated high school in 1972, to 4.56 years for high school graduates in 1992 (p.18). Each cohort showed a consistent increase in time to degree of .11 calendar years compared to the previous cohort. Research by Astin et al. (1996) suggests that time-to-degree may differ based on race or ethnicity as well. In their study, six year degree completion rates for White students were 4.6% higher than four year rates, while increases over the same time period were significantly higher for all other groups. Greater numbers of students in these groups who take longer to graduate would necessarily indicate a longer average time-to-degree.

The relatively low rate of degree completion points to a significant retention issue in higher education. In order to understand how to improve degree completion rates, it is first necessary to understand which individual and institutional factors impact student attrition and retention in higher education.

Individual Factors that Affect Degree Completion

Numerous studies investigate student characteristics that positively or negatively predict retention and degree completion in an effort to identify and influence these processes. The most commonly identified student characteristics associated with differential degree completion rates are academic preparation and performance, gender, race/ethnicity, and socio-economic status. Because this data is typically collected as part of the application process, institutions already have "the most important input predictors on their entering students, thereby making it possible for them to calculate expected degree attainment rates that control for most of the degree attainment variance that can be attributable to entering student characteristics" (Astin et al.,1996, p.26). Other factors that play a role in student attrition and retention are included at the end of this section.

Academic Preparation and Performance

High school GPA and performance on standardized tests serve as two measures of academic preparation for college, and both strongly predict degree completion rates. "Indeed, research suggests that at least half of the variation in degree attainment rates among institutions can be attributed to differences in HSGs [high school grades] and SAT scores of the students who enroll (Astin, 1996)" (Astin et al., p.16). Astin and his colleagues found that 66% of students who entered college with a high school GPA of A graduated in six years, compared to 41% with a B average, and 17% with a C average or less. The authors note that,

> school grades are indeed a major determinant of the student's chances of completing college, regardless of whether degree completion is set at four, six, or nine years. Thus, students who enter college with A grade averages are four to five times more likely to finish college than are students with C grade averages or less (p.11).

High school GPA is also positively correlated with attaining higher freshman year grades in college, which in turn predict retention and degree completion. "[C]ollege grades may well be the single best predictors of student persistence, [and] degree completion" (Pascarella & Terenzini, 2005, p.396). Cabrera, Burkum, and LaNasa (2005) found this to be true across racial/ethnic and socioeconomic status groups: "[a]cross all students, every increasing grade change in GPA improves the chances to complete a college degree by 32 percent" (p.189). Astin (1971) found that only one in ten freshmen who attained an A average dropped out of college at the end of their freshman year compared to eight in ten freshmen who received failing grades. Similar to the results of Cabrera et al., freshman year grades in Astin's study were a better predictor of retention than were high school grades.

Turner's (2004) research on factors connected to low degree completion rates found a decrease in the academic preparation of college-going students between 1970 and 2000, a period in which overall college participation increased by 9%.

> [T]his change implies that the student at the margin of college enrollment has declined about a quarter of a standard deviation in test performance…. Combined with increasing rates of college-going, the implication is that the marginal college student may be less prepared to complete the college curriculum than students attending college in prior decades (p.39).

In a later study, Bound, Lovenheim, & Turner (2009) were able to quantify the effect of this decline as it relates to degree completion rate changes between the entering college cohorts of 1972 and 1988. Their evaluation revealed that across all categories of postsecondary institutions, one-third of the decline in graduation rates can be attributed to declining academic preparation of entering college students, although this factor explains more of the variance in completion rates at two-year institutions than four-year institutions.

Gender

Multiple studies demonstrate that being female is positively correlated with degree completion (Astin et al., 1996; Bound et al., 2009; Knapp, Kelly-Reid, & Ginder, 2010; Peter & Horn, 2005; Turner, 2004), a trend which began in the 1980s. In 1972, women enrolled in four-year institutions at lower rates than did their male counterparts, and lagged behind men in degree completion rates as well (Eckland & Henderson, 1981). By 1980, women accounted for 50% of undergraduates at four-year institutions (Peter & Horn) and that proportion grew to 56% by fall 2008 (Knapp et al.). Degree completion rates reflect a similar shift, with even distribution of degrees earned in 1980 changing to 57% earned by women in 2001 (Peter & Horn). The most recent data for the cohort

entering four-year institutions in 2002 shows a continuation of this pattern, with women graduating at higher rates than men from both public and private not-for-profit institutions. Private for-profit institutions are the exception for this cohort, where men are more likely to earn a degree than are women despite lower overall enrollment in these institutions (Knapp et al.).

Bound et al.'s (2005) research on the entering college cohorts of 1972 and 1988 found that not only did women's participation in higher education increase between these cohorts, their likelihood of graduating improved significantly. They suggest that "labor market opportunities and the associated returns to college completion for women changed over this period, with women in the later cohort much more likely to expect extended labor force participation (Goldin, Katz, and Kuziemko, 2006)" (p.25).

The degree completion advantage of female students differs by racial or ethnic group and is also changing over time. Astin et al. (1996) found that women in the entering college cohort of 1985 were more likely to graduate in nine years than men only for White, African American, and Native American students, while Asian American men and women graduated at the same rate and Mexican American and Puerto Rican American men were more likely to graduate than women in these groups (p.6). Peter and Horn (2005) found that female students earned 50% or more of bachelor's degrees among Native American, African American, White, and Hispanic students in the entering cohort of 1980-81; by 1990-1991, women earned more than 50% of all bachelor's degrees for all groups except nonresident aliens, and the achievement gap between men and women increased further in 2001-2002 (p.11).

Race/Ethnicity

Between 1976 and 2004, the proportion of racial or ethnic minority students participating in postsecondary education increased from 17% to 32% with growth occurring in all groups and far outpacing growth in enrollment of White students (KewalRamani, Gilbertson, Fox, & Provasnik, 2007, p.108). When viewed in terms of college attendance rates for each minority group, participation increased between 1980 and 2004 for White (from 28% of high school graduates to 42%), African American (from 20% to 32%), and Hispanic (from 16% to 25%) students. Asian American enrollments increased more moderately (from 57% to 60%), and remained the highest proportional participation rate in postsecondary education of any minority group (p.112).

Increases in higher education participation do not necessarily translate into proportional increases in degree completion. White students earn bachelor's degrees in six years at higher rates than do African American, Hispanic, and Native American students, while Asian American students have the highest degree completion rate of all racial or ethnic groups (Astin et al., 1996; Tinto, 1993).

> What these differential rates show is that the underrepresentation of these minority groups among entering college freshmen is being substantially exacerbated by their relatively low degree attainment rates during the undergraduate years. In other words, the undergraduate years represent a major "leak" in the educational pipeline for students from underrepresented ethnic/minority groups. (Astin et al, p.6).

Tinto's (1993) findings on attrition corroborate this: while 39% of White students drop out of college within six years of matriculation, 53% of Hispanic students and 60% of African American students do so (p.31). Despite the larger proportion of Hispanic individuals in society, they received fewer degrees than African American students (KewalRamani et al., 2007), and a statistically significant, negative correlation exists

between being Hispanic and probability of degree completion (Cabrera et al., 2003). In contrast, being Asian American is a significant positive predictor of degree completion. Stage and Hossler (2000) suggest these differences in degree attainment stem from differential expectations of post-secondary attainment between minority and majority students, and that this disparity will only be resolved through efforts directed at students while still in high school or earlier.

Factors influencing differential degree completion and attrition rates vary between groups based on race and ethnicity. Schwartz and Washington (2007) found that social adjustment and attachment to the institution predicted the retention of female African American students. The study recommends that institutions consider the effect of campus environment on the retention of African American students, and must "include, in order of importance, first semester grades as an indication of academic integration, non-cognitive, demographic and interactive variables (social integration and commitment), and other cognitive variables" when examining retention issues (p.32). Research on the retention of African American males at community colleges found that being younger, high school GPA, full-time enrollment, certainty of major, and the importance the student places on college completion all positively influenced retention (Hagedorn, Maxwell, & Hampton, 2007). Low-self assessment of skills and dropping courses were negatively associated with retention. Berger and Milem's (1999) research on student involvement and persistence found that being African American was negatively correlated with persistence, and like Schwartz and Washington, emphasized the importance of campus climate on retention of students of color.

In summarizing research findings related to attrition or retention of Hispanic students, Hernandez and Lopez (2007) report that traditional measures of academic preparation, such as high school GPA and standardized test scores are not accurate predictors of college performance or retention, and that a strong academic self-concept is important for minority students. Acknowledging the importance of the family in the retention of Hispanic students is essential; since family is such an important part of the life and decision-making process for Hispanic students, institutions would be well advised to help families understand and feel confident about the environment in which their children will live. As with African American students, campus climate plays an important role in the retention of Hispanic students.

Less research has been conducted on the experience of Native American and Asian American students in higher education. Native Americans have the lowest degree completion rate among the racial and ethnic minority groups under discussion here (Knapp et al., 2010; Astin et al., 1996). Belgarde and LoRé (2007) conducted research on the retention of Native American students and found that some students did not feel academically prepared for college. Native American students also valued family and tradition above individual needs, which impacted their time-to-degree rates. At the opposite extreme, Asian American students have the highest representation in postsecondary education of any racial or ethnic minority group (KewalRamani et al., 2007) and the highest degree completion rates of any group (Astin et al.). However, Yeh (2007) cautions against the tendency to view Asian American students as a homogenous, high achieving group. Students identified as Asian American range from U.S.-born individuals to refugees, and college attendance and success rates vary widely between

sub-groups. Yeh's review of the literature identifies academic under-preparedness, first-generation status, language/ESL issues, socio-economic status, other family demands, and cultural adjustment as individual factors affecting Asian American student retention.

Rendón, Jalomo, and Nora (2000) observe that much of the research that is specifically focused on minority students does not always acknowledge that what is unexplained may in fact be the most important knowledge to attain.

> Findings may turn out to be statistically significant, even though very little of the variance is explained. In these cases what may be most interesting is not what was statistically significant. Rather, the most important finding could be that there are other multiple, unaccounted factors that may be influencing retention (p.150).

The authors also point out that research on minority student populations is a relatively new occurrence and that much of the research on retention began before minority students achieved a critical mass on college campuses. The changing demographics in the U.S. clearly point to the need for additional data on how best to retain students of color to graduation.

Socioeconomic Status

The literature repeatedly notes the disparities in higher education attainment based on the socioeconomic status of entering students (Astin et al., 1996; Astin & Oseguera, 2005; Berkner et al., 2002; Cabrera et al., 2005; Tinto, 1993; Turner, 2004). Berkner et al. found that among students who entered a four-year institution immediately upon high school graduation with the intention of achieving a bachelor's degree, students in the lowest socioeconomic quintile also had the lowest six year degree completion rate. Interestingly, this group had the second highest degree completion rate between four and six years post-admission, which may reflect the awareness of this population of the additional cost associated with longer enrollment.

Tinto (1993) demonstrated that roughly half of the difference in completion rates between students from different racial or ethnic minority groups can be explained by controlling for socioeconomic status and ability. "Differences in rates of four-year degree completion between persons of different ethnicity but of similar ability or similar socioeconomic status are quite a bit smaller than those between different ethnic groups overall" (p.31). Cabrera et al. (2005) found that in contrast to low socioeconomic status students, students in the middle-low category were 11% more likely to graduate, middle-high students were 15% more likely, and the highest socioeconomic status students were 24% more likely to graduate (p.187). These increases were statistically significant at each level. In addition, "SES also moderates the effect of GPA. For example, among lowest-SES students, changes in GPA increase degree completion rates by 28 percent, while among middle low-SES students the size of the effect is 49 percent" (p.189). However, it is important to note that when Astin (2001) separated the three factors used to represent socioeconomic status in his study, he found that they were more effective in predicting degree completion individually (p.195), which points to the challenges associated with creating indexes comprised of multiple variables to represent socioeconomic status.

Other Factors

The factors identified above are by no means the only variables which impact retention and degree completion. Astin (2001) found that, "[t]he complexity of the retention phenomenon is underlined by the observation that thirty-three different student input characteristics carried significant weigh in predicting degree completion" (p.193). Additional factors include: parental education (Astin, 2001; Turner, 2004); major (Astin,

2001; Astin et al., 1996; Pascarella & Terenzini, 2005); age (Astin, 2001; Hagedorn et al., 2007), and living on-campus (Astin, 2001; Pascarella & Terenzini, 2005) among others.

Institutional Factors that Affect Student Retention

While individual factors significantly impact the educational outcomes of college students, institutional factors also influence retention and degree completion. According to Astin (2001), "[r]etention is significantly affected by more environmental variables than almost any other outcome measure" (p.195). The most influential factors affecting degree completion rates are institutional size, type of control, selectivity, and campus environment/climate.

Research on the effect of institutional size on degree completion rates yields conflicting findings. Astin et al. (1996) found a negative correlation between institutional size and degree completion among White and Mexican-American students. However, other research indicates that when variations in student entry characteristics are accounted for, institutional size is not a negative factor in degree completion rates (Pascarella & Terenzini, 2005).

Attending a private university is positively correlated with degree completion rates (Astin, 1971; Astin et al., 1996). Private universities had the highest nine year completion rates for all racial and ethnic groups, which may be due in part to the effect of institutional selectivity (Astin et al.). Institutional selectivity "had a substantial positive effect on all subgroups except Mexican-American/Chicanos, whereas attending a public university had a significant negative effect on all groups except Mexican-American/Chicanos and Puerto Rican-Americans" (p.27). Since public universities tend to be more selective than public colleges, the positive effect of selectivity on degree

completion rates masked the negative effect of public universities. This effect impacts male and female students differently; while women had higher graduation rates at all institutional types over a nine year period, this advantage was greatest at public universities (9%) and smallest at private universities and colleges (3%) (p.9). However, the negative effect of attending a public university or college is clear for less selective institutions, where decreases in degree completion over the last thirty years have been concentrated (Bound et al., 2009).

Campus climate, which manifests through the experience of students once they arrive on campus, plays a significant role in student retention. "What happens following entry [to the institution] is, in most cases, more important to the process of student departure than what has previously occurred" (Tinto, 1993, p.45). Research generally supports the positive influence of contact with faculty outside the classroom on persistence (Astin & Oseguera, 2005; Stage, 1989; Tinto, 1993; however, see Bean, 1985). This is implied by Astin's (2001) finding that a student-oriented attitude among faculty positively predicts student retention. Similarly, an institutional commitment to the welfare of students also increases the likelihood that students will persist (Braxton et al., 2004). This commitment is particularly important for racial and ethnic minority students, who are less familiar with the expectations and norms of college and may require more outreach in order to adjust.

> In the end, students will elect to stay or leave college…because college and university faculty and administrators have made transformative shifts in governance, curriculum development, in- and out-of-class teaching and learning, student programming, and other institutional dimensions that affect students on a daily basis (Rendón et al., 2000, p.152).

Interactions with peers also predict retention (Astin, 2001; Bean, 1985; Tinto, 1993), and this combination of academic and social contacts contributes to students' perceptions of a positive campus environment.

The discussion of campus climate includes multiple references to the impact of interactions with faculty and students on retention and attrition. Meaningful interactions with others are a prominent element of theories which predict student departure and retention. The next section focuses on the key theories related to this process of retaining students which informed this study.

Theoretical Foundations: From Student Departure to Student Engagement

In seeking to understand how study abroad participation could affect the degree completion rate of students, this discussion will focus on two well established theories, Tinto's Interactionalist Theory of Student Departure and Astin's Developmental Theory of Involvement. Astin's theory in turn leads to Kuh and associates' concept of student engagement and a discussion of the practices which promote it.

Tinto's Interactionalist Theory of Student Departure proposes that the process of student departure occurs as a result of the unsuccessful academic and/or social integration of the student at the institution. The entry characteristics of students and their commitments external to the university, such as employment or family responsibilities, create the initial condition of matriculating students. The research discussed previously illustrates clearly how these characteristics have positive or negative predictive powers vis-à-vis retention. These characteristics, commitments, and the student's own goals and commitment to the institution, "help establish the initial conditions for subsequent interactions between the individual and other members of the institution" (p.115). These

interactions occur through academic or social mechanisms, and the preponderance of positive or negative interactions in turn affects the students' commitment to the goal of degree completion or to remaining enrolled at the institution itself. Tinto suggests that the institutional community in which a student exists can be divided into two main sectors, academic and social. Academic integration occurs through academic performance and interactions with faculty and staff while social integration occurs through extracurricular activities and peer group interactions.

> Interactive experiences which further one's social and intellectual integration are seen to enhance the likelihood that the individual will persist within the institution until degree completion, because of the impact integrative experiences have upon the continued reformulation of individual goals and commitments (Tinto, 1993, p.116).

In contrast, negative experiences decrease commitment to the goal of graduation or to continued enrollment at that particular institution. In addition, external commitments may exert a "pulling away" effect on students, even when integrative experiences at the institution have been positive (p.119).

First offered as a theoretical model in 1975 and revised in 1993, Tinto's theory now "enjoys near paradigmatic stature in the study of college student departure" (Braxton, 2000). Numerous studies explore the effectiveness of Tinto's model in explaining attrition and retention, with mixed results. Strong support exists for the influence of social integration on retention (Bean, 1985; Braxton et al., 2004; Braxton & Lien, 2000). Institutional fit also plays a significant role in predicting retention (Bean, 1990), particularly among freshmen and sophomores (Bean, 1985). How well students' expectations about the institution upon matriculation correspond to their actual experience on campus also affects institutional fit, and thereby retention (Braxton,

Vesper, & Hossler, 1995). The influence of academic integration has been more difficult to establish. Braxton & Lein's evaluation of research on academic integration suggests that it is most likely to yield significant results in studies of non-residential institutions. This may indicate that in studies of residential institutions, the effect is present, but subsumed beneath the stronger effect of social integration.

Tinto (2000) himself suggests that it may be more accurate to show academic integration as a sphere nested within social integration. "[S]ocial and academic life are interwoven and social communities *emerge* out of academic activities that take place within the more limited academic sphere of the classroom" (p.91). This reformulation of the original constructs of integration reflects the convergence in recent years of Tinto's theory with elements of Astin's Developmental Theory of Student Involvement. "[I]nvolvement, or what has been frequently…described as academic and social integration, is a condition for student success (e.g. Astin 1993; Tinto 1993). Quite simply, the more students are academically and socially involved, the more likely they are to persist and graduate" (Tinto, 2005, p.323).

Like Tinto's theory, Astin's Developmental Theory of Student Involvement arose out of research on student departure. Astin's longitudinal study of college dropouts sought to identify factors that affect students' persistence. He found that "virtually every significant effect could be rationalized in terms of the involvement concept; that is, every positive factor was likely to increase student involvement in the undergraduate experience, whereas every negative factor was likely to reduce involvement" (Astin, 1984, p.302). Therefore, even though he describes this as a student development theory, it is also a theory of student retention.

Simply put, Astin (1984) suggests that student involvement in the learning process is the key to student development and knowledge acquisition. Student involvement is defined as "the amount of physical and psychological energy that the student devotes to the academic experience" (p.297). Astin based his theory on the Freudian concept of *cathexis*, defined as the "investment of mental or emotional energy in a person, object, or idea" (Merriam-Webster's Online Dictionary, n.d.). As evidence of the power of student involvement to contribute to the development of students, and thus their retention, Astin sites the positive correlation between living on campus, joining a sorority or fraternity, participating in extracurricular activities and sports, and working part-time on campus, while working off-campus full-time is negatively correlated with retention and involvement. Astin's results were corroborated and expanded upon in later research (Astin, 2001; Astin et al., 1996).

In proposing a new theoretical framework for examining effective educational practice, Astin recommends that further research "determine whether particular student characteristics (e.g. socioeconomic status, academic preparation, sex) are significantly related to different forms of involvement and whether a given form of involvement produces different outcomes for different types of students" (1984, p.306). Numerous studies, including Astin's own, have attempted to do so in the intervening years. Of this body of research, the work of Kuh and his associates (2005) on student engagement provides supporting evidence for the link between study abroad participation and degree completion rates.

Like Astin, Kuh et al. (2005) assert that "[w]hat students *do* during college counts more in terms of what they learn and whether they will persist in college than who they

are or even where they go to college" (p.8). To determine which activities and institutional practices promote student engagement, the researchers used data from the National Survey of Student Engagement (NSSE) to identify 20 institutions that performed better than predicted on measures of student engagement and graduation rates when compared to institutions of similar size and selectivity. The Documenting Effective Educational Practice (DEEP) study, examined in depth the factors that promote student engagement and lead to student success in order to provide models for intentional educational practice which other institutions can emulate. The premise for their work is echoed by Pascarella & Terenzini (2005): "if, as it appears, individual effort or engagement is the critical determinant of the impact of college, then it is important to focus on the ways in which an institution can shape its academic, interpersonal, and extracurricular offerings to encourage student engagement" (p.602).

NSSE data provides an institutional profile based on five clusters of educational practice which improve student engagement and degree completion rates: level of academic challenge, active and collaborative learning, student interactions with faculty members, enriching educational experiences, and supportive campus environment. Enriching educational experiences encompass activities outside the traditional classroom, such as internships or field experiences, community service or volunteer work, foreign language coursework, study abroad, independent study or self-designed major, co-curricular activities, and a culminating senior experience (Kuh et al., 2005, p.12). Institutions that excel in this area,

> offer many different opportunities inside and outside the classroom that complement the goals of the academic program. One of the most important is exposure to diversity, from which students learn valuable things about themselves and gain an appreciation for other cultures (p.11).

While study abroad is one of several types of enriching educational experiences, it is important to note that four of the 20 DEEP institutions are in the top ten nationally based on the percentage of enrolled students who study abroad. The strong positive reaction of students who studied abroad indicates the impact of such experiences. "Across the DEEP institutions, students who studied abroad described the experiences uniformly as 'transforming,' 'life-changing,' and 'the best experience of my life'" (p.226). In an unpublished presentation on student engagement and study abroad, Kuh (2008) described study abroad as a "high impact" student engagement activity with statistically significant positive effects on student perceptions of their level of academic challenge, active and collaborative learning, student-faculty interactions, and the supportiveness of the campus environment. According to his data, these gains were experienced by students regardless of the length of time abroad.

The work of Kuh et al. (2005) makes clear the importance of engaging educational experiences in the process of student engagement, and that student engagement in turn positively influences degree completion. Their research indicates that study abroad falls into this category, yet it is unclear the extent to which this activity may affect degree completion, and whether this benefit applies equally to students in different demographic groups or types of programs, with different levels of academic performance, or at different points in their academic careers when they study abroad. With over half of college-bound students interested in study abroad (American Council on Education (ACE), Art & Science Group, & College Board, 2007) and both institutions and students invested in degree completion, the possibility that study abroad may correlate with higher degree completion rates merits further investigation.

The following sections provide an overview of the current status of study abroad, factors related to intent to study abroad and the decision-making process, and research on educational outcomes of study abroad participation. The final section examines existing research specifically related to time-to-degree and degree completion rates of study abroad participants and non-participants, as well as other academic performance measures.

The Growing Emphasis on Study Abroad

Study abroad has drawn increasing attention as an educational activity important to universities, individuals, and the nation. The final report of the Commission on the Future of Higher Education (2006) framed the importance of study abroad in economic terms:

> [t]he need to produce a globally literate citizenry is critical to the nation's continued success in the global economy…. Higher education, too, must put greater emphasis on international education, including foreign language instruction and study abroad, in order to ensure that graduates have the skills necessary to function effectively in the global workforce (p.27).

The Commission on the Abraham Lincoln Study Abroad Fellowship Program (2005) took a similar, if bleaker, approach: "what nations don't know can hurt them. The stakes involved in study abroad are that simple, that straightforward, and that important. For their own future and that of the nation, college graduates today must be internationally competent" (p.iv). Institutions demonstrate an increasing emphasis on internationalization, which manifests through inclusion of international education in mission statements and widespread study abroad programming on college and university campuses (Green, Luu & Burris, 2008).

Yet this increased emphasis on study abroad translates into relatively small increases in participation when compared to the overall growth in postsecondary educational enrollments, and those increases are distributed unevenly across different student populations. In the past, these disparities have been attributed to differing levels of interest in study abroad between demographic groups, but recent research indicates that this may not be the case (ACE et al., 2008; Arts & Sciences Group, 2000; Rust, Dhanatya, Furuto, & Kheiltash, 2007; Salisbury, Paulsen, & Pascarella, 2010; Salisbury, Umbach, Paulsen, & Pascarella, 2009). The following summary of the current status of study abroad participation and research begins with an overview of patterns of study abroad enrollment, factors related to intent to study abroad and the decision-making process; research on outcomes of study abroad participation; and concludes with a discussion of findings directly related to the current research on the relationship between study abroad participation, degree completion and time-to-degree.

Patterns of Enrollment in Study Abroad

Student participation and interest in study abroad experienced significant, though uneven growth over the last three decades. According to the Institute of International Education (IIE), participation rose more than 300% between 1987 and 2008 (Bhandari & Chow, 2009). In 2007-2008, over 262,000 U.S. students studied abroad; this equates to a 10% national participation rate for undergraduate students in postsecondary education according to the calculation method used by IIE (number of study abroad participants divided by the number of degrees granted). Of those who studied abroad, almost 229,000 were enrolled at four-year institutions (author's calculation based on IIE data tables), a 15% national participation rate based on IIE's calculation method. As a percentage of all

students enrolled in four-year institutions, however, the participation rate is a much more modest 2% (Snyder & Dillow, 2010; Bhandari & Chow).

Despite changes in the matriculation patterns of students in postsecondary education, study abroad has seen little change in the demographic makeup of participants over the last decade (Bhandari & Chow, 2009; NCES, 2009). Female students continue to represent roughly two-thirds of all participants, compared to 57% of all students at degree-granting institutions (NCES, 2010). Negligible changes in participation have occurred among the racial/ethnic groups studying abroad. White students represented 85% of all participants in 1998-1999 compared to under 82% in 2007-2008, with the largest increase in participation occurring among Asian or Pacific Islander students (6.6% compared to 4.4% previously), followed by African American students (4.0% compared to 3.3%), and Hispanic students (5.9% compared to 5.2%). In comparison, White students represented 64.4% of all students enrolled at degree-granting institutions in 2007, followed by African American (13.1%), Hispanic (11.4%), Asian or Pacific Islander (6.7%), Native American (1.0%), and nonresident alien students (3.4%). The significant disparity in study abroad participation between racial/ethnic groups has been a longstanding cause for concern among study abroad professionals (Hembroff & Rusz, 1993).

Study abroad traditionally enrolls the most students from social science fields, and this trend remained constant over the last decade. In 2007-2008, social science majors accounted for 21.5% of students abroad, a slight increase from 20.1% in 1998-1999 (Bhandari & Chow, 2009). The greatest growth in participation during this interval occurred among Business and Management majors (20.2% in 2007-2008 compared to

17.7% previously). This increase may be due in part to the emphasis placed on international curricula by the American Assembly of Collegiate Schools of Business (AACSB), the accrediting body for business schools (Reylea, Cocchiara, & Studdard, 2008; Sánchez, Fornerino & Zhang, 2006). Humanities majors were the third largest category of study abroad participants, although their proportion has declined slightly over a 10 year period (from 14.6% to 13.3% currently). The remaining discipline categories each enrolled less than 10% of students going abroad: Fine/Applied Arts, Physical/Life Sciences, Foreign Languages, Health Professions, Education, Engineering, Math/Computer Science, Agriculture, Undeclared major, and other fields of study. Participation among students majoring in these disciplines changed less than 1% over the last decade with the exception of Foreign Language majors (decrease from 8.1% to 6.2% of students going abroad) and undeclared majors (decrease from 4.3% to 3.3%). As with participation by gender and race/ethnicity, study abroad enrollments by major were not representative of overall enrollments in higher education. According to NCES data, the top disciplines conferring undergraduate degrees in 2007-2008 were Business (21.4%), Social Sciences and History (10.7%), Health Sciences (7.1%), and Education (6.6%).

Who Goes, Who Stays: Intent, Motivation, and the Decision-Making Process

The relatively low rate of study abroad participation among higher education students stands in stark contrast to the increasing interest of high school seniors in participating once matriculated. Two surveys sponsored in part by the American Council on Education show the upward trend in student interest. In 2000, 48% of graduating seniors planned to study abroad while in college (ACE & Art & Science Group); by 2008, 55% were "certain or fairly certain" they would study abroad and an additional

26% were very interested in doing so (ACE et al., p.1). At UT Austin, NSSE data indicate that 56% of freshman who entered the university in 2010 planned to study abroad, while an additional 26% had not yet decided (NSSE, 2010). Other research corroborates the finding that relatively high levels of interest in study abroad exist despite low participation rates, and in fact "lack of student interest isn't the problem" (Rust et al., 2007, p.11). "Interest is there, and the task of study abroad offices is to sustain and retain that interest and make the opportunity to study abroad as attainable as possible for every student" (p.7).

The growth in interest and participation in study abroad has led multiple researchers to examine the factors that influence this decision-making process. In particular, studies have examined the differences between students who express interest in studying abroad and those who do not, as well as those students who successfully translate interest into participation. The combined results of these studies inform our understanding of factors which predict both interest and participation in study abroad.

Intent to Study Abroad

In recent years, a small group of studies has emerged which examine student intent to study abroad, separate from the realization of that intent through participation (Rust et al., 2007; Salisbury, Paulsen, & Pascarella, 2010; Salisbury, Umbach et al., 2009). Salisbury, Umbach et al. and Salisbury, Paulsen, and Pascarella studied intent to study abroad among 2,772 freshmen students at 60 institutions using college-choice theory as an explanatory model. In the initial study, the researchers examined the correlation between intent to study abroad and demographic variables as well as measures of human capital (knowledge, talents, skills), financial capital (ability to pay, including

financial aid), social capital (access to information, resources, and support via social networks and structures), and cultural capital (cultural knowledge, language skills, and other factors primarily derived from parents' class status). Social and cultural capital were measured by a composite of socioeconomic status, parents' educational level, attitudes toward literacy, involvement in high school, and openness to diversity (Salisbury, Umbach et al., p.136). The same sample and variables were then re-examined to identify differences based on gender.

Although data from the first study revealed multiple correlations between these variables and intent to study abroad, the second study showed that much of these findings in fact arose from the male or female respondents, but not both. Of the 12 items initially found to predict intent to study abroad, only two variables held true for both men and women when the data were disaggregated by gender: openness to diversity and having a positive attitude toward literacy, both of which were positive predictors (Salisbury, Paulsen & Pascarella, 2010; Salisbury, Umbach et al., 2009). Based on the second data analysis in which respondents were first grouped by gender, significant positive predictors of intent for women were: parents' educational attainment; being Hispanic; majoring in the Social Sciences; course-related diversity experiences; and co-curricular involvement. Attendance at an institution other than a liberal arts college and the integration of knowledge, information, and ideas across the curriculum negatively correlated to intent to study abroad among women. Intent to study abroad among men was positively predicted by: being undecided on major; majoring in a field other than business, education, STEM or social sciences; and the integration of knowledge, information, and ideas across the curriculum. Being Asian American/Pacific Islander,

high school involvement, and peer interactions negatively correlated to men's intent to study abroad. These findings are particularly concerning given that factors previously believed to positively predict interest in study abroad, such as high school involvement and peer interactions, may in fact have a negative effect on males. The authors conclude with a recommendation that study abroad professionals, "craft targeted marketing strategies that recognize and account for key differences between women and men in terms of both pre-college and in-college experiences that affect the formation of aspirations to study abroad" (p.635).

Rust et al. (2007) examined data from 279,000 respondents to the 2003 Cooperative Institutional Research Program (CIRP) Freshman Survey to determine if students who indicated they were likely to study abroad also exhibited higher levels of involvement in academic, social, and other arenas. The study reinforced some patterns already seen among study abroad participants: those likely to study abroad tend to be female; attend private, particularly liberal arts, colleges; and have high SAT scores and GPAs. Rust et al. found no significant differences in interest in study abroad based on race/ethnicity, major, or among students whose families were in lower income brackets. In addition, they found a correlation between student involvement and likelihood of studying abroad. Given the results of Salisbury, Paulsen, and Pascarella's (2010) study on gender and intent to study abroad, it is possible that the involvement variable may have been influenced by the female respondents.

Relyea et al. (2008) examined the effect of risk tolerance and perceived career value of study abroad on students' intent to participate. In a study of 341 business students, the researchers found that risk tolerance positively correlated to intent to study

abroad, as long as the student placed career value on participation. "[S]tudents who may have a high risk propensity, but see little if any value in their career outcome, will simply not want to exert the effort to participate in an international experience" (p.356). Gender again played a role in these findings as female business students were more risk averse and less likely to intend to study abroad than their male counterparts. However, it is important to note that in other studies, career value as a motivating factor in the decision to study abroad appealed more strongly to men than women (Anderson, 2007; Lucas, 2009), which may have skewed predictors of intent in this study.

In a study on the impact of individual beliefs and values on likely study abroad participation, Goldstein and Kim (2006) surveyed 179 undergraduates at a liberal arts college during their freshman year and then analyzed responses based on which individuals had studied abroad. Significant predictors of study abroad participation were low levels of ethnocentrism, the expectation to study abroad, low levels of prejudice, and an interest in foreign languages. However, this study compared only participants in semester and year-long programs and omitted students who had participated in short-term programs. Similarly, Peterson (2003) found that student expectation to study abroad also predicted participation, as did a positive attitude toward participation.

Penn and Tanner (2009) specifically examined intent to study abroad among 41 African American students during the summer following graduation from high school. Their objective was to examine previously postulated reasons for low study abroad participation by African American students, specifically "choice of major, attrition rates, lower levels of social economic affluence, and the lack of encouragement and support" (p.266) by family and friends with respect to study abroad participation. Eighty-five

percent of respondents indicated that they would like to study abroad and that they were aware of the costs of participation, dispelling the notion that awareness, interest, and financial information are less prevalent among this population. In contrast to current trends in study abroad participation, the destination of most interest was Africa. The authors concluded, "[t]he desire for Black students to go to Africa supports the thesis that students have an affinity to travel to places where they can easily identify with the people and culture germane to the geographical area" (p. 275), which may suggest the need for more targeted programming to increase participation among this group.

Motivation and the Decision-Making Process

Although research on student interest in study abroad explains some disparities in actual participation rates, particularly by gender, it does not explain others. A number of studies investigated patterns of participation by examining what motivated students to study abroad and the decision-making process as students determined whether or not to participate. Assessments of students' motives to study abroad over the last 30 years demonstrate some consistent patterns and others that have emerged more recently. Some of the most frequently cited motivating factors include: cultural interest (Anderson, 2007; Carlson et al., 1990; Chieffo, 2000; Kasravi, 2009); the desire to learn another language (Anderson; Carlson et al.; Chieffo; Goldstein & Kim, 2006; Sánchez et al., 2006); interest in gaining a better understanding of him/herself or American culture (Carlson et al., Kasravi); the desire to travel or to be in a particular geographic area (Anderson; Booker; Carlson et al.; Chieffo); and the desire to have fun (Anderson; Sánchez et al.). While important, participants typically placed less emphasis on the academic

compatibility of study abroad courses with degree requirements compared to other motivating factors (Chieffo; Kasravi; however, see Lucas).

In studies which compared students who went abroad with those who did not, a large proportion of non-participants were interested in and aware of study abroad opportunities (Carlson et al., 1990; Chieffo, 2000; Lucas, 2009; Spiering & Erickson, 2006) and expressed similar motivations about why they had considered going abroad (Booker, 2001; Lucas). Peterson (2003) found that study abroad alumni exhibited a stronger belief in the value of study abroad compared to non-participants, but that the mean difference was small. Even non-participants had a very positive view of the benefit of study abroad (mean of 5.63 on a 7 point Lickert scale). Peterson also found differences between participants and non-participants in terms of their attitude toward what she termed "Attitude Motivators" of study abroad, such as gaining a new perspective on life through study abroad or learning a foreign language. In contrast, and consistent with Lucas, she found no difference between participants and non-participants in their assessment of the barriers to overcome in order to study abroad, which students identified as how study abroad fit with academic plans, the potential to delay graduation, and expenses.

Consistent with Peterson (2003), financial and academic factors were the most frequently cited barriers to study abroad participation by both participants and non-participants, although others have also been identified. Cost was the most frequently cited barrier and included concerns such as the total cost of participation, the applicability of financial aid to program expenses, and the opportunity cost due to lost wages (Anderson, 2007; Booker, 2001; Chieffo, 2000; Kasravi, 2009; Lucas; Peterson; Sánchez et al.,

2006). Several studies noted that financial barriers were a greater concern for women than men (Lucas; Salisbury, Paulsen, & Pascarella, 2010; Shirley, 2006). Academic barriers to participation also appeared in multiple studies, and included delayed graduation, applicability of courses abroad to degree requirements, and course scheduling conflicts (Anderson; Booker; Carlson et al.; Cloughly, 1991; Kasravi; Lucas; Peterson; Shirley, 2006). Both Shirley and Lucas found that male students were significantly more likely than female students to associate participation with delayed graduation, which could relate to the lower participation rate among men. Sánchez et al. found that familial barriers to participation explained 25% of the variance in intent to participate among a sample of U.S. college students, and was a greater concern than financial barriers. Chieffo also found that 26% of respondents who did not plan to study abroad cited other obligations as a significant reason, which she defined as obligations beyond common concerns such as maintaining a job, apartment, or participating in sports (p.75). Very small proportions of participants and non-participants indicated that health and safety issues abroad were major barriers (Lucas; Kasravi).

Students of color experience these and additional barriers which may not be an issue for majority students. In a study examining differences between minority students who do and do not study abroad, Kasravi (2009) found that both groups identified the same four barriers to participation and ranked them in the same order: program cost, study abroad courses not fitting into the academic program, restrictions on financial aid for study abroad, and delayed graduation as a result of participation. Some students experienced family resistance to study abroad, primarily because of concern for the student's safety, concern over costs, or failure by the family to perceive value in the

experience of study abroad. Cultural norms for individuals in particular minority groups also created a barrier to participation as the desire to study abroad competed with familial values toward career and parental influence, as well as the perception that "people of color do not study abroad" (p.125).

Relationships play an important role in influencing students' decisions to study abroad or not, and parents, peers, and faculty/staff are particularly influential for different groups. Lucas (2009) found that parents had the strongest influence on students' decisions to study abroad. Anderson (2007), Kasravi (2009), and Sánchez et al. (2006) also indentified parents as influential in the decision to study abroad. Peer influence exerted significant influence in the decision-making process (Anderson; Peterson, 2003), and this influence varied across demographic groups (Kasravi, Lucas). Kasravi's research revealed that this influence was particularly significant for Asian/Asian American or biracial students. Lucas found that "[m]ales generally put a lot of emphasis on friends and peer messages – more than females; however, these messages were not always supportive" (p.226). Faculty and staff also played an influential role: over half of participants in Anderson's study received encouragement from university faculty and staff to pursue study abroad, while Lucas concluded that men wanted to hear about the value of study abroad from their colleges and faculty because they wanted confirmation of the academic and career value of participation from trusted sources. Self-motivation plays an important role as well; both Anderson and Kasravi discovered that for some students, the internal drive to study abroad allowed them to persevere when faced with obstacles to participation.

Based on the research, significant similarities exist between study abroad participants and non-participants, yet they clearly reach different conclusions about the same activity. Research demonstrates broad interest in study abroad among both groups, similar perceptions of the value of participation, and similar barriers. Relyea et al. (2008) suggest that expectancy theory helps to explain the differential outcomes for students in the decision-making process. Expectancy theory states that "one's efforts will lead to rewards if the rewards have valence (that is, have value) for the individual who is expending the effort toward achieving a particular outcome" (p.350). In other words, students choose to study abroad when the benefits outweigh the challenges or barriers. While this may be broadly true, it fails to explain the significant gap between interest in study abroad and participation among different demographic groups, particularly students of color and men.

The Effect of Study Abroad on Learning and Development

In any discussion of who does and does not study abroad, it is important to describe *why* such effort is placed on the activity itself. After all, if there are no measurable differences in students' knowledge, development, or attitudes, why should universities, individuals, or the government invest in the experience? Longstanding efforts to quantify the outcomes of study abroad have generated consistent results in some areas and are only beginning to generate lines of investigation in others. The following summary of research on student outcomes illustrates the multiple benefits of study abroad which support the belief that it is an endeavor worthy of advocacy and expanded participation for a wide variety of students.

Perhaps the most well documented outcome of study abroad is improvement of language facility (e.g. Carlson et al., 1990; Segalowitz et al., 2004; Vande Berg et al., 2009; Vera et al., 2009). Multiple studies have also found that study abroad participants' international interest or "world-mindedness" increases as a result of study abroad and in contrast to students who do not study abroad (Braskamp, Braskamp & Merrill, 2009; Carlson et al, 1990; Carlson & Widaman, 1988; Sutton & Rubin, 2004). Research examining world-mindedness as an outcome of programs of different lengths is contradictory (Dwyer, 2004; Kehl & Morris, 2007), although Chieffo and Griffiths (2009) and Dwyer suggest that the structure of short-term programs greatly influences whether and how much students develop as a result of participation.

Since 2000, several large-scale studies have examined short- and long-term effects of study abroad participation. The findings on learning outcomes from a research initiative of the University System of Georgia revealed that study abroad participants' functional knowledge increased significantly, which is "an especially empowering and transformative outcome of their experience, for it instills confidence that one can achieve goals even in unfamiliar settings (Juhasz & Walker, 1988; Lathrop, 1999)" (Sutton & Rubin, 2004, p.77). According to this study, students also improved their knowledge of global interdependence, cultural relativism, and world geography, even after controlling for the influence of major. A study by Braskamp, Braskamp, and Merrill (2009) also demonstrated that study abroad "enhances global learning and development" and that "students changed their self-assessments of their knowledge of cultural traditions, sense of self, and relations with others over the period of a semester" (p.111).

Paige et al. (2009) investigated the long-term effects of study abroad participation among more than 6,000 individuals who studied abroad between 1960 and 2007. The study examined global engagement among study abroad alumni, a concept which includes "civic engagement, philanthropy, knowledge production, social entrepreneurship, and voluntary simplicity" (p.7), as well as educational and career outcomes. Respondents indicated that study abroad had a stronger impact on their lives than any other college experience (83%) – stronger than college friendships (73%) or coursework (66%). As with research on intent to study abroad and the decision-making process, differential outcomes were observed for men and women. Female study abroad alumni demonstrated greater than average volunteerism and global values, while male study abroad alumni demonstrated greater than average international and domestic civic engagement and global leadership (Paige, Stallman, Jon, & LaBrack, 2009). In addition, respondents held graduate degrees at nearly twice the rate as the general population (Paige, Stallman et al.). These outcomes were observed regardless of the length or type of program in which individuals participated.

In a 50 year longitudinal study of the impact of study abroad conducted by a large provider organization, results demonstrated that "study abroad has a significant impact on students in the areas of continued language use, academic attainment measures, intercultural and personal development, and career choices (Dwyer, 2004, p.161) and that the impact of study abroad can affect individuals for decades. Dwyer and Norris (2005) conducted additional research using this dataset to compare outcomes for participants in facilitated direct enrollment (direct enrollment in a foreign institution combined with support staff and activities specifically for U.S. student participants) and hybrid programs

(one or more classes in a foreign institution combined with staff, activities, and courses for U.S. student participants). Results showed that both program types "benefit students equally well in most areas of intercultural awareness, personal growth, and academic attainment. There are significant differences, however, in the areas of career development, [and] continued foreign language use," among other variables (p.138).

The Georgetown Consortium Project (Vande Berg et al., 2009) assessed language learning, intercultural development, and discipline-specific learning among 1,300 participants from 61 different study abroad programs which varied greatly in terms of structure, length, and location. The study found that: study abroad participants "averaged more progress in intercultural learning and oral proficiency in their target languages that control students" studying the language in a U.S. classroom; student characteristics and program elements impact both kinds of learning; and improved oral fluency in another language is significantly, if indirectly, related to intercultural competency gains (p.2). Intercultural competency changes were significant for female students and not male students and participants in programs over 12 weeks in length exhibited significant gains in this area compared to peers on shorter programs. The researchers conclude by recommending that program design considerations include a "cultural mentor" as this greatly enhances the ability of students to make intercultural competency gains (p.30). This represents a significant change from the past in which study abroad participation has been assumed to contribute to intercultural competency gains by virtue of the student's presence abroad.

While the research above clearly demonstrates meaningful, positive gains from study abroad participation, several challenges are endemic to study abroad research more

broadly. First, most studies are "small-scale and leave uncontrolled numerous factors on which students who study abroad are known to differ from those who do not" (Pascarella & Terenzini, 2005, p.316). Differences in the student body of individual institutions, as well as variation in institutional type or programmatic elements, make it challenging to apply results from small-scale studies to the endeavor as a whole. Second, students change as a result of maturation, so researchers must be mindful to establish control groups when making assessments of change-over-time for study abroad participants if at all possible (Carlson & Widaman, 1988; Haddis, 2005). Third, research often rests on students' perspectives on their own development, sometimes asking them to project back to their thoughts, feelings, or beliefs prior to study abroad in order to determine change over time. This poses the risk that participants' memories may differ from what really happened, or that participants may respond as they believe they should, i.e. that study abroad should have caused a change in perspective (Carlson & Widaman, 1988). And finally, researchers continue to use different terms and definitions for the outcomes of study abroad, as well as different assessment instruments, making it challenging to replicate research results.

The Effect of Study Abroad on Retention, Time-to-Degree, and Degree Completion

As study abroad grows in popularity and prominence on university campuses, it is increasingly important to understand the multiple effects of participation on participants. Much of the existing research focuses on the transformative or developmental aspects of study abroad, yet students, and their parents, are often concerned about more concrete academic performance measures when determining whether or not to participate. In the last decade, a small amount of research has emerged comparing study abroad participants

and non- participants in terms of retention, time-to-degree, and degree completion rates. Collectively, these studies demonstrate a positive net effect in terms of these academic performance measures when comparing study abroad participants to institutional averages. However, differing methodologies and research agendas suggest the need for more systematic research in this area.

Two universities make available descriptive statistics comparing degree completion rates of study abroad participants and non-participants. The University of Minnesota-Twin Cities provides data tables aptly titled "Study Abroad Does Not Delay Graduation" which demonstrate that study abroad participants have higher graduation rates that non-participants overall and when examined by academic aptitude and college of enrollment (Office of Institutional Research, 2009a, 2009b, 2009c). A separate data table tracking retention of study abroad participants and non-participants through the fourth year of enrollment shows that participants are more likely to remain enrolled at the institution as well (Office of Institutional Research, 2009d). The University of California, San Diego posts similar data tables on their web site (Student Research & Information, 2009) which corroborate the findings at the University of Minnesota. These data include additional analyses for gender, race/ethnicity, first generation in college status, parental income, and various measures of expected or actual academic performance, all of which show higher graduation and retention rates for study abroad participants compared to other students. While both sets of data show more positive outcomes for study abroad participants versus non-participants, neither provides analyses of to confirm if these differences are statistically significant.

The University System of Georgia's multi-year research project on study abroad outcomes includes comparisons of academic performance measures in the fourth phase of a seven phase study (Sutton & Rubin, 2010). Initial analyses of over 31,000 study abroad records for students at system institutions found that among first-time, full-time students entering a Georgia System institution, 88.7% of those who studied abroad graduated within six years compared to the system-wide average of 49.3%. The researchers then created clustered control groups to match study abroad participants and non-participants by institution, semester, and class standing during the semester prior to participation (Rubin, 2010) in order to "address 'arguments that say the reason why graduation rates are higher for study abroad students are they are of higher socioeconomic status, or they may be more industrious, or they may be choosing easier majors'" (Redden, 2010). This process yielded a study abroad sample of 19,109 students compared to a control group of 17,903 students. Findings showed that the 83.4% of students in the control group graduated within six years, 5.3% less than among study abroad participants. This research revealed statistically significant increases in degree completion rates that were higher than the average for males (by 6-12%), females (by 6-19%), African Americans (by 13-31%), other non-White students (by 7-18%), and for students with combined SAT scores above 1000 (by 4-11%). Four-year degree completion rates showed the greatest difference between study abroad and control groups and decreased in five- and six-year rates. When data were analyzed by higher education sector, study abroad participants at research universities were found to have 16.1% higher odds of graduating in four years compared to the control group while students at state (comprehensive) universities had 19% lower odds of graduating.

In earlier analyses, Sutton and Rubin (2007) also examined graduation rates between study abroad participants based on program length, classification at the time of participation, gender, and race/ethnicity. Their data indicated that four-year graduation rates were higher among females, students of color, students who participated in shorter programs, and students who studied abroad earlier in their academic careers (freshmen or sophomores). However, the data currently available does not include significance levels for differences in degree completion rates or comparative data on non-participants. Of the data available which compares study abroad participation and degree completion, the Georgia study is the only one to examine differences based on class standing at the time of participation and duration of program, two variables considered in the current research.

Posey (2003) analyzed time-to-degree and degree completion rates of study abroad participants compared to non-participants using data from the Florida State System. The sample for the study consisted of 11,467 individuals in three entering cohorts between 1993 and 1995, of whom 886 had studied abroad. These data included students admitted for associates, bachelors, and graduate programs at multiple institutions in the System. Posey compared these groups based on overall degree attainment, then compared degree completion rates for these groups based on gender and race/ethnicity. Results of the study showed that 93% of study abroad participants received some type of degree compared to 64% of non-participants and that a statistically significant ($p=.000$), positive relationship existed between study abroad participation and graduation, although the effect size was weak (p.59). While bachelor's degree completion for study abroad students far exceeded that of non-participants (81% versus 57%), it may be understated since the study examined highest degree awarded, and some students may have

progressed from bachelors to masters during the time period in question. If this is the case though, it would only serve to strengthen the findings in this area.

Posey further decomposed the data on degree completion by gender and race/ethnicity for the full populations of the three cohort years in question. In both cases, study abroad participants graduated at higher rates than did their non-participant counterparts. While graduation rates for male and female participants were parallel at 92.2% and 92.6% respectively, when examined by race/ethnicity they showed considerably more variability. Asian American, African American, and Native American study abroad participants had 100% graduation rates, while 93% of White students and 87.3% of Hispanic students graduated. Posey notes the disproportional representation of African American students among Law and Masters graduates. Without additional data regarding the composition of undergraduate and graduate populations, it is unclear what conclusions to draw from this result. Similarly, the sample size for two racial categories, Asian American and Native American, was quite small for the study abroad participant group and it is unclear if they were sufficiently large to form a basis for judgment. Posey found a statistically significant, positive correlation between study abroad participation and a shorter time-to-degree ($p=.000$) for all students in this study and for bachelor's recipients. Time-to-degree for bachelor's recipients who had studied abroad was 4.13 years compared to 4.27 years for non-participants.

Young (2003, 2008) conducted research evaluating the impact of participation in a single study abroad program in Rome on student persistence and degree completion rates. She found that 91% of participants in the Rome program were still enrolled at the institution two semesters post-participation compared to 72% of non-participants. When

background variables were held constant, participation increased retention at the institution by .83 semesters. Participants had a four-year degree completion rate of 79% compared to 51% for students in the control group. Participation in the Rome program explained 4% of the variance in the number of semesters students enrolled following the sophomore year, the point at which students typically participated in the program. While narrow in scope, this study contributes to the body of research regarding degree completion and study abroad.

Lozada (2007) investigated whether study abroad participation affected persistence and degree completion at a two-year institution. Unlike Young's results, study abroad participation had no significant effect on retention two quarters following participation. Also in contrast to other results, study abroad participants were less likely to graduate from the college than non-participants. Given the differences between two- and four-year institutions, these findings may not be applicable to students at four-year institutions.

Flash (1999) surveyed study abroad alumni prior to graduation to determine what effect study abroad participation had on academic progress. Effect on degree completion was measured by participants' self-reported change in graduation date. Results indicated that for most (74%), graduation was not delayed (p.63). In some cases, the ability to take coursework abroad actually facilitated on-time graduation as students were able to take more courses in a particular term that applied toward degree requirements than would have been available on-campus. Flash then examined university records to determine if study abroad participation affected time-to-degree completion. Her population consisted of 3,970 students who entered the university during fall 1992 or later and received their

degree by February 1999, up to 6.5 years post-admission, of which 1,683 (42%) had studied abroad at some point in their career. Like Posey (2003), Flash found slight differences in time-to-degree between study abroad participants (4.33 years) and non-participants (4.43 years) (p.69), although she did not provide statistical analyses regarding significance.

The combination of data and research described above suggest differences in time-to-degree and degree completion rates between study abroad participants and non-participants in the aggregate and for specific subgroups. However, inconsistencies in statistical methodology, or failure to assess whether observed differences are statistically significant points to the need for additional research in this area. In addition, none of the studies on academic performance outcomes account for the motivational factors which may distinguish study abroad participants from non-participants, and which may be linked to other academic measures which distinguish these groups. The current study attempts to address this variable by including students who applied to but did not study abroad as a means to approximate motivation.

Summary

This chapter provides an overview of the literature on degree completion rates, the importance of degree attainment, factors which positively or negatively affect degree completion, and explanatory theories of student departure and retention. While risk factors for attrition have been studied for decades, research on activities and institutional practices which promote retention and degree completion developed more recently. Student involvement theory and the concept of student engagement both emphasize the centrality of a student's own efforts in the educational process; "[s]tudents are not passive

recipients of institutional efforts to ‘educate’ or ‘change’ them but rather bear major responsibility for any gains they derive from their postsecondary experience” (Pascarella & Terenzini, 2005, p.602). Kuh et al. (2005) identify study abroad as one of a number of activities which yield positive and significant results in terms of student engagement.

Study abroad participation has been shown to yield multiple educational developmental outcomes in participants, yet research on academic performance measures is more limited, particularly as it relates to degree completion and time-to-degree. Parallel to the work of Kuh et al., Metzger (2006) notes “[t]he strong similarities in the student characteristics that affect retention compared to the variables that are positively influenced by study abroad programs” and suggests study abroad as a possible retention tool, particularly for minority students (p.171). While broad student interest in study abroad has been documented by multiple sources (ACE et al., 2008; Art & Science Group, 2000; NSSE, 2010), participation remains low and concerns over delayed graduation as a result of studying abroad continue to pose a significant barrier for prospective participants. If study abroad is to be considered a retention tool as Metzger suggests, its effect on degree completion and time-to-degree must be evaluated further.

Chapter 3

Methodology

Overview

Too few students entering higher education complete their degrees. Estimates of degree completion rates range from 45% (Astin et al., 1996; Tinto, 1993) to 67% (Adelman, 2004) of students who matriculate. A recent report from the National Center for Education Statistics (NCES) places the six-year degree completion rate for FTIC students at four-year institutions at 57% for the 2001 graduating cohort (2009, p.4). "Even if baccalaureate completion estimates are low, as some claim (Adelman, 2004), everyone agrees that persistence and educational attainment rates, as well as the quality of student learning, must improve if postsecondary education is to meet the needs of our nation and our world" (Kuh et al., 2005, p.7). Building on Astin's *Developmental* Theory of Student Involvement, Kuh et al. identified activities and institutional practices that foster student engagement. Data collected through the National Survey of Student Engagement (NSSE) demonstrate that institutions with engaging practices also have higher than expected graduation rates compared to similar institutions. The connection between engaging activities and degree completion points to new avenues institutions can explore as a means to involve and retain students to graduation.

Study abroad is one of the engaging activities identified by Kuh et al. (2005), and its growing popularity among students makes it worthy of further exploration in relation to its ability to engage students. According to the Institute for International Education (IIE) *Open Doors* 2009 report (Bhandari & Chow, 2009), study abroad enrollments have "more than tripled over the past two decades" (p.18). During the 2007-2008 academic

year, 234,600 U.S. undergraduates studied abroad for credit, an increase of 8.5% over the prior year. However, this represents an annual national participation rate of just over 10% (p.22), which is significantly lower than interest levels among college-bound high school seniors would suggest. Research documenting student barriers to study abroad consistently report the perception that study abroad participation delays graduation, and this may contribute to the marked disparity between interest and participation. This research addresses both institutional and individual desires to understand which activities may foster degree completion, as well as student concerns about the perceived delay in graduation caused by study abroad participation.

Research Questions

In an effort to assess whether study abroad participation impacts degree completion rates and time-to-degree, this study investigated the following questions:

1. Does a relationship exist between study abroad participation and degree completion?
    a. Do degree completion rates differ between study abroad participants, applicants, and non-participants?
    b. Do degree completion rates differ for the target groups when compared by students' gender, race/ethnicity, SAT composite score, GPA at sophomore standing, and college?
    c. Do degree completion rates differ among study abroad participants based on the type of program in which they participated, length of participation, or classification (class standing) at the time of participation?
2. Does a relationship exist between study abroad participation and time-to-degree?

a. Does time-to-degree differ between study abroad participants, applicants, and non-participants?
b. Does time-to-degree differ for the target groups when compared by students' gender, race/ethnicity, SAT composite score, GPA at sophomore standing, and college?
c. Does time-to-degree differ among study abroad participants based on the type of program in which they participated, length of participation, or classification at the time of participation?

3. How do alumni from the cohort in question perceive the value of study abroad factors which influence or inhibit study abroad participation at UT Austin?

Research Design

Using a mixed-methods design, this study examined degree completion rates between members of the first-time-in-college (FTIC) student cohort of 2002 at UT Austin who studied abroad (participants) compared to those who did not. To control for the effect of self-selection and motivational factors in the decision to study abroad, non-participants were further divided into those who applied but did not participate in a study abroad program (applicants) and those who did not apply or study abroad (non-participants). The ability to include this additional group improves the reliability of results generated by this study as it accounts for the known difference in intent and motivation to study abroad which a comparison to non-participants alone cannot address. This study compared degree completion rates at four, five, six, and eight years post-admission to assess whether differences occurred between groups. Other variables are known to impact degree completion, therefore additional analyses were conducted

including gender, race/ethnicity, GPA at sophomore standing, and SAT composite score to determine if differences between groups were in fact attributable to factors other than study abroad participation. Further comparisons among sub-groups of study abroad participants examined if degree completion rates varied based on participants' class standing at the time of participation, type of program in which they participated, or length of program. Because students commonly associate delayed graduation with study abroad participation, all analyses were also run comparing time-to-degree for graduates in different groups to determine if this assumption is accurate.

Overall graduation rates between the three primary groups (participants, applicants, and non-participants) were compared at eight years post-admission, the period for which data were available, and at four, five, and six years post-admission to the university. For the 2002 cohort, UT admitted the majority of students in fall 2002 (*n*=6795, 86.6%). Due to the admission of 1050 students, or 13.4%, during the preceding summer semester, graduation rates were calculated from the semester of first enrollment instead of by academic year. Four, five, and six year degree completion rates were included for analysis based on the requirements of the federal Student Right-to-Know and Campus Security Act of 1990, in which "[t]he graduation rate was defined as the percentage of full-time, first-time, degree-seeking enrolled students who graduate after 150 percent of the normal time for completion, defined as six years for four-year colleges (eight semesters or twelve quarters excluding summer terms)" (Hagedorn, 2005, p.94). According to research by Astin et al. (1996) comparing four, six, and nine year graduation rates, "allowing an additional three years beyond the conventional six-year period makes very little difference in the overall degree attainment rate for students

entering four-year colleges and universities in the United States" (pp.3-4). However, since data were available up to eight years post-admission, the upper bound was extended to include all graduates to be thorough.

To better understand factors which may influence study abroad participation or create barriers to participation at UT, this study included interviews with alumni from the 2002 cohort. Interviews were conducted by phone with alumni from the three primary groups under investigation, study abroad participants, applicants, and non-participants. These interviews provided richer and deeper information than statistical data alone, and offered insights into factors which may have contribute to the disparity between student interest in study abroad and participation.

Population and Groups

The size of The University of Texas at Austin (UT Austin) makes it an ideal institution for research on educational outcomes among matriculated students. According to the Carnegie Classification system, the university is categorized as a large, more selective, comprehensive doctoral, full-time, four-year institution. The university is the flagship institution of The University of Texas System offering a balanced arts and sciences/professions undergraduate curriculum, and is classified as a research university with very high research activity (The Carnegie Foundation for the Advancement of Teaching, n.d.). Total enrollment at the university was 50,995 in fall 2009, with an undergraduate population of 38,168 (IMA, 2009b). UT consists of 13 colleges and schools (hereafter referred to as "colleges" for simplicity): Colleges of Communication, Education, Fine Arts, Liberal Arts, Natural Sciences, and Pharmacy; Schools of Architecture, Nursing, and Social Work; and the Cockrell School of Engineering, the Red

McCombs School of Business, and the John A. and Katherine G. Jackson School of Geosciences.

The population for this study was the 2002 FTIC freshman cohort which consisted of 7,845 students. Four-, five-, six- and eight-year degree completion rates for this cohort are summarized in Table 1. To be consistent with the use of data in this study, these rates use the cohort total enrollment without excluding individuals who did not persist or graduate because of "death, permanent disability, or service in the armed forces, foreign aid service of the federal government, or official church missions" as reported in the official UT *Common Data Set 2008-2009* (IMA, 2009a, p.4). According to IMA, these exclusions adjusted the cohort size to 7,809 and increased the six-year graduation rate to 78.1%.

Table 1

Degree Completion Rates for the 2002 FTIC Student Cohort: Four, Five, Six, and Eight Years Post-Admission

	Frequency	Percent Graduated
Graduated in four years or less	3,769	48.0%
Graduated in five years or less	5,720	72.9%
Graduated in six years or less	6,100	77.8%
Graduated in eight years or less	6,230	80.4%

UT Austin is also one of the largest U.S. institutions in terms of the total number of students who study abroad each year. In 2007-2008, UT ranked fourth in the nation for number of students abroad, with 2,342 participants in that year. Among those who

studied abroad in 2007-2008, 72% of participants (*n*=1681) were undergraduates while the remaining 28% (*n*=661) were in graduate programs. IIE estimates annual study abroad participation rates by dividing the number of undergraduate students abroad by the number of associates and bachelor's degrees conferred in a given year. By this calculation, an estimated 10.1% of U.S. undergraduates studied abroad in 2007-2008. Following their method of calculation, the undergraduate participation rate at UT was 19.4% in 2007-2008 (IIE, 2009; IMA, 2009a). However, the data revealed a participation rate for the 2002 FTIC of 13.7%. Further analysis showed that three factors contributed to the difference between the overall undergraduate participation rate and the participation rate of the target population: participants who took part in more than one program (*n*=95 individuals who collectively participated in 104 programs); non-FTIC participants (*n*=186); and students who participated in non-UT programs and did not appear as participants in UT's databases (estimated *n*=67 based on 2003-2009 average).

For the current study, the 2002 FTIC cohort was divided into three groups: study abroad participants, applicants, and non-participants. Participants and applicants consisted of those students who participated or applied to participate in a study abroad program during their undergraduate career. The cohort included 1,076 participants, 281 applicants, and 6,488 non-participants. Based on a standard deviation of .69 in time to degree for the 6,100 students who graduated in six years, these group sizes far exceed the necessary sample size of 190 students to ensure reliable results.

Data Collection and Preparation Procedures

Permission to collect quantitative and qualitative data on UT students in the 2002 cohort was secured from the Institutional Review Boards (IRB) of the University of

Nebraska, Lincoln and The University of Texas at Austin. Copies of approval letters from both IRBs are contained in the appendices.

Quantitative Data Collection and Preparation Procedures

Data for the quantitative portion of this research were retrieved from two UT data systems. The UT Data Warehouse provided demographic information on all students in the 2002 cohort. Because the Data Warehouse does not contain details of study abroad participation, programming language was written to match student records in the university system with applicant and participant records in the Study Abroad Office system using each student's unique Electronic Identification (EID) code. When students possessed multiple study abroad records, the data were added to new columns in the output spreadsheet in order to track the number, timing, and type of study abroad records possessed by each student.

The dataset included the following items for all members of this cohort: UT EID; gender; race/ethnicity; standardized test scores (SAT and/or ACT); semester of last enrollment; college at admission; college of graduation; semester of graduation; and GPA at the point when students attained sophomore standing or at the conclusion of their first semester, for those who entered as sophomores or above. In addition, the following items were obtained for study abroad participants: number of records in the system; application status associated with each record; semester associated with each record; number of credits earned prior to semester associated with each record; program identification code; and program name.

Several data fields required modification prior to statistical analysis. The majority of students had SAT scores on record (n=7476), and only 369 had taken the ACT alone;

therefore ACT composite scores were converted to SAT composite scores using concordance tables published by The College Board (n.d.) to standardize the data. To determine degree completion rates, semester of first enrollment and semester of graduation were used to calculate the number of semesters of enrollment. Using Adelman's (2004) construct of elapsed calendar years, each semester was equated to .33 of one year and totaled to determine time-to-degree. By this method, the traditional four-year degree equates to 3.66 elapsed calendar years. This method of calculating time to graduation is not a count of enrolled semesters.

Several variables were collapsed to facilitate analysis. GPAs were collapsed and coded into eight ranges for comparison: 0.00-0.50 (1); 0.51-1.00 (2); 1.01-1.50 (3); 1.51-2.00 (4); 2.01-2.50 (5); 2.51-3.00 (6); 3.01-3.50 (7); and 3.51-4.00 (8). The lowest GPA ranges were included to ensure equally sized "steps" from one GPA level to the next for regression analyses. Similarly, SAT composite scores were collapsed and recoded for analysis into 12 ranges: 400-499 (1); 500-599 (2); 600-699 (3); 700-799 (4); 800-899 (5); 900-999 (6); 1000-1099 (7); 1100-1199 (8); 1200-1299 (9); 1300-1399 (10); 1400-1499 (11); and 1500-1600 (12). In addition, freshman and sophomore groups were collapsed for analysis of classification at program participation due to the small number of freshman participants (n=11) and after chi-square tests of independence revealed no significant difference between the groups in terms of degree completion or time-to-degree.

Non-participant and applicant groups were collapsed in two analyses that investigated the potential influence of other background variables (gender, race/ethnicity, etc.) on degree completion and time-to-degree. This consolidation was necessary in order

to complete these analyses using logistic regression and ordinal logistic regression. Although differences were observed in degree completion rates between applicants and non-participants, in this instance it was more accurate for the purpose of the overall analysis to include applicants, who technically are a sub-group of non-participants, rather than to omit them.

Data on study abroad application/participation records also required modification in order to be analyzed. Program code and program name were used to categorize records as faculty-led, affiliated or exchange programs and coded 1, 2 and 3 respectively. Classification at the commencement of the program was calculated based on the cumulative credits earned by the individual prior to participation compared to the credit ranges assigned to different class standings. Freshmen were coded as 1 (credit range: 0-29), sophomores were coded as 2 (credit range: 30-59), juniors were coded as 3 (credit range: 60-89), and seniors were coded as 4 (credit range: 90 or more).

The term and unique program code associated with each record were compared to determine program length. Term alone was not an accurate measure due to significant numbers of programs of four weeks or less in which the program is considered to occur during a long semester (fall or spring) because the course credit is awarded in that semester. Participation was classified as short-term, mid-length or long-term depending on the length of the program abroad. Programs of eight weeks or less were considered short-term and coded as 1, more than eight weeks up to a semester was considered mid-length and coded as 2, and long-term programs were coded as 3. While short-term programs were variable in length within the assigned range, long-term programs were consistently two semesters in length.

In addition, individuals who participated in multiple programs (*n*=95) were removed from the dataset for two reasons. First, it is impossible to accurately compare single- and multiple-program participants on measures such as program type, length or classification; these categories cannot be averaged or summed to account for multiple program types, the accumulation of time abroad through multiple programs, or the difference in class standing while on different programs. Assuming these challenges could be overcome, blending multiple-program participants into the overall sample presumes that the relationship between degree completion and time-to-degree for single- and multiple-program participants is similar. This assumption requires further testing before such a conclusion can be drawn. Descriptive statistics for this group are provided in the appendices.

Qualitative Data Collection and Preparation Procedures

The decision to conduct interviews with alumni from the 2002 entering class occurred after IRB approvals were secured, therefore a second application was submitted and approved at UT Austin and a modification of the original proposal was approved at UNL. Interviews were conducted by phone with three to eight individuals in each of the three student categories, participants, applicants, and non-participants. Due to limited access to accurate contact information for alumni, the sample for this portion of the study was drawn from students currently enrolled at UT during fall semester 2010 on the assumption that these students would keep their e-mail addresses up-to-date in order to receive pertinent enrollment and billing information from the university. A second dataset for the 2002 FTIC entering cohort was requested and included 277 students who were still enrolled at UT during fall semester 2010. Of these, the 192 individuals

pursuing graduate programs at the university or enrolled as non-degree seekers formed the sample for the qualitative portion of this study. The excluded students (*n*=85) were removed due to the emphasis of this research on degree completion, the inability of these students to answer some of the interview questions which assumed graduation, and the likelihood that these questions would create an uncomfortable situation for students still pursuing their undergraduate degrees.

The 192 individuals in graduate programs were sorted based on their status as participants, applicants, or non-participants. These data were manually checked to ensure that the appropriate status was assigned based on participation as an undergraduate since a number of individuals applied or participated in programs as graduate students. A random number generator was used to identify individuals to contact regarding participation in a phone interview (Haahr, 2010). Invitations were sent in two groups, and then a follow up request was sent after seven to ten days. Five to seven interviews were sought for each group, and this target was met for both participant and non-participant groups. Eight out of 26 study abroad alumni invited to participate were willing to do so, a response rate of 30.8%. Only seven individuals in the entire group were coded as applicants, three of whom volunteered to participate, a 42.9% response rate. The response rate for non-participants was much lower at 10.2%, with only five individuals volunteering out of a total of 49. Volunteers were offered modest compensation for their time. Phone interviews were recorded and transcribed by the researcher, and pseudonyms were assigned to respondents to protect their identities.

Data Analysis

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 19.0. Descriptive statistics compared characteristics of participant and non-participant groups and sub-groups of study abroad participants. Chi-square tests of independence were used to evaluate significant associations between study abroad status and degree completion at four, five, six, and eight years post-admission to the university as well as for time-to-degree analyses. Subsequent chi-square analyses examined whether study abroad participation impacted degree completion and time-to-degree differently based on the participant's program type, program length or classification at the time of participation.

Logistic regression was used to assess to what extent, if any, study abroad participation predicted degree completion beyond the predictive value of gender, race/ethnicity, GPA at sophomore standing and SAT composite score. Data were analyzed using ordinal logistic regression to determine whether a correlation existed between time-to-degree and study abroad participation when these same variables which influence degree completion were included.

Chapter 4

Results

Introduction

The purpose of this study was to investigate the relationship between study abroad participation, degree completion, and time-to-degree. This was a mixed-methods study that utilized data drawn from two databases at UT Austin for quantitative analyses and identified prospective alumni of this cohort for the qualitative portion of the research. The population for this study was the 2002 entering cohort of first-time-in-college (FTIC) students at The University of Texas at Austin (*n*=7845). Because research indicates that gender, race/ethnicity, GPA, and performance on standardized test scores affect the likelihood of graduating and time-to-degree, further analyses attempted to identify if these factors also influence differential outcomes between study abroad participants and non-participants.

Analyses were run comparing degree completion rates and time-to-degree for three distinct groups, shown in Table 2: (1) study abroad participants (participants), (2) students who applied to study abroad, but did not participate (applicants), and (3) students who neither applied nor participated (non-participants). Although participants in multiple programs were omitted from statistical analyses, they are included here to accurately represent the cohort size. When multiple-program participants were removed, the cohort consisted of 7,750 students, 12.7% of whom studied abroad. SPSS version 19.0 was used for all statistical analyses.

Table 2

Study Abroad Status (Frequency and Percentage)

	Frequency	%
Participant (single program)	981	12.5
Participant (multiple programs)	95	1.2
Applicant	281	3.6
Non-Participant	6488	82.7
Total	7845	100

Describing the Participant, Applicant, and Non-Participant Groups

College of Admission and Graduation

Table 3 shows the frequency and percentage of participants, applicants, and non-participants who were admitted to UT's colleges. The largest proportions of participants were admitted to Business (30.9%), Liberal Arts (26.7%), and Natural Sciences (12.4%) respectively. These colleges maintained the same ranking in terms of applicants as well, with 27.0%, 24.2%, and 17.4% respectively. When college of admission was examined for non-participants, a different pattern emerged: the largest proportion were admitted to Natural Sciences (23.1%), followed by Business (20.4%), and Engineering (19.8%). When the overall proportion in the entering class was compared to the proportion of study abroad participants, Liberal Arts was overrepresented among study abroad participants by 9.3% followed by Business at 8.7%. In contrast, Engineering was the most underrepresented among participants (-11.9%) followed by Natural Sciences (-8.9%).

Table 3

College of Admission by Study Abroad Status (Frequency and Percentage)

	Participant	Applicant	Non-Participant	Total
Architecture	33 (3.4%)	4 (3.9%)	121 (1.9%)	158 (2.0%)
Business	303 (30.9%)	76 (27.0%)	1344 (20.4%)	1723 (22.2%)
Communication	118 (12.0%)	33 (11.7%)	663 (10.2%)	814 (10.5%)
Education	24 (2.4%)	5 (1.8%)	208 (3.2%)	237 (3.1%)
Engineering	57 (5.8%)	30 (10.7%)	1287 (19.8%)	1374 (17.7%)
Fine Arts	50 (5.1%)	11 (3.9%)	212 (3.3%)	273 (3.5%)
Liberal Arts	262 (26.7%)	68 (24.2%)	1017 (15.7%)	1347 (17.4%)
Natural Sciences	124 (12.6%)	49 (17.4%)	1497 (23.1%)	1670 (21.5%)
Nursing	8 (0.8%)	3 (1.1%)	111 (1.7%)	122 (1.6%)
Pharmacy	0 (0.0%)	0 (0.0%)	1 (0.0%)	1 (0.0%)
Social Work	2 (0.2%)	2 (0.7%)	27 (0.4%)	31 (0.4%)
Total	981 (100%)	281 (100%)	6488 (100%)	7750 (100%)

Many students in the 2002 cohort changed majors during their undergraduate career, and these changes were reflected in the proportions of participants, applicants, and non-participants when examined by the college from which they graduated. Table 4 details the frequency and proportion of students in each group as well as their proportion across groups. This table represents only those students who graduated from the university by summer 2010 (80.4%), eight years post-admission.

Liberal Arts represented the largest proportion of each category when evaluated by college of graduation, with 41.4% of study abroad participants, 40.3% of applicants, and 26.4% of non-participants; graduates of Liberal Arts were the most overrepresented

among study abroad participants (+12.1%). Business ranked second in the proportion of participants (18.7%) while Communication ranked third (17.9%); these rankings were reversed for Communication and Business in their proportion of applicants (17.5% and 16.3% respectively). Natural Sciences graduates represented the second largest proportion of non-participants (18.8%) and was the most significantly underrepresented among participants (-10.1%). Engineering had the third largest proportion of non-participants (14.7%) and was the second most underrepresented among study abroad participants (-9.1%).

Table 4

College of Graduation by Study Abroad Status (Frequency and Percentage)

	Participant	Applicant	Non-Participant	Total
Architecture	29 (3.0%)	5 (1.9%)	17 (0.3%)	51 (0.8%)
Business	179 (18.7%)	43 (16.3%)	627 (12.5%)	849 (13.6%)
Communication	171 (17.9%)	46 (17.5%)	680 (13.6%)	897 (14.4%)
Education	29 (3.0%)	10 (3.8%)	405 (8.1%)	444 (7.1%)
Engineering	33 (3.5%)	12 (4.6%)	737 (14.7%)	782 (12.6%)
Fine Arts	44 (4.6%)	9 (3.2%)	135 (2.7%)	188 (3.0%)
Geosciences	1 (0.1%)	0 (0.0%)	26 (0.5%)	27 (0.4%)
Liberal Arts	396 (41.4%)	106 (40.3%)	1321 (26.4%)	1823 (29.3%)
Natural Sciences	61 (6.4%)	27 (10.3%)	941 (18.8%)	1029 (16.5%)
Nursing	5 (0.5%)	1 (0.4%)	61 (1.2%)	67 (1.1%)
Pharmacy	4 (0.4%)	1 (0.4%)	32 (0.6%)	37 (0.6%)
Social Work	4 (0.4%)	3 (1.1%)	29 (0.5%)	36 (0.6%)
Total	956 (100%)	263 (100%)	5011 (100%)	6230 (100%)

Gender and Race/Ethnicity

Consistent with national trends in study abroad participation, women were significantly overrepresented among participants. Women represented 52.3% (*n*=4057) of the cohort, yet 69.2% (*n*=679) of participants and 68.3% (*n*=192) of applicants. In comparison to their representation in the cohort (*n*=3693, 47.7%), men were underrepresented among participants by 16.9% and among applicants by 16%. Table 5 summarizes data on gender and study abroad status for this cohort.

Table 5

Gender by Study Abroad Status (Frequency and Percentage)

	Participant	Applicant	Non-Participant	Total
Female	679 (69.2%)	192 (68.3%)	3186 (49.1%)	4057 (52.3%)
Male	302 (30.8%)	89 (31.7%)	3302 (50.9%)	3693 (47.7%)
Total	981 (100%)	281 (100%)	6488 (100%)	7750 (100%)

Less variability was seen when participation was examined by students' race/ethnicity, as detailed in Table 6. Although the proportions varied, the three largest groups in the cohort by race/ethnicity were also the three largest groups participating in study abroad. White students comprised the largest group in the cohort (*n*=4768, 61.5%) and among participants (*n*=659, 67.2%). Consistent with national trends in study abroad enrollment, White students were overrepresented among participants (+5.2%), although they were proportionally represented among applicants (*n*=174, 61.9%) and slightly underrepresented among non-participants (-0.8%). Asian American students were the largest group of students of color on campus (*n*=1459, 18.8%) and among study abroad

participants (*n*=178, 18.1%). Asian American students were underrepresented among participants (-0.7%) and applicants (-2.8%) and slightly overrepresented among non-participants (+0.3%). Hispanic students were the third largest group in the cohort (*n*=1108, 14.3%) and among study abroad participants (*n*=117, 11.9%). However, they were the most underrepresented group among participants (-2.4%) and were overrepresented among applicants (+2.4%) when compared to their overall proportion in the cohort. African American students comprised 3.4% of the overall cohort (*n*=265), but 1.6% of participants (*n*=16) and 2.8% of applicants (*n*=8). The remaining groups, Foreign, Native American, and Unknown, collectively represented 2.0% of the cohort and 1.1% of participants.

Table 6

Race/Ethnicity by Study Abroad Status (Frequency and Percentage)

	Participant	Applicant	Non-Participant	Total
African American	16 (1.6%)	8 (2.8%)	241 (3.7%)	265 (3.4%)
Asian American	178 (18.1%)	45 (16.0%)	1236 (19.1%)	1459 (18.8%)
Foreign	7 (0.7%)	5 (1.8%)	102 (1.6%)	114 (1.5%)
Hispanic	117 (11.9%)	47 (16.7%)	944 (14.5%)	1108 (14.3%)
Native American	4 (0.4%)	2 (0.7%)	29 (0.4%)	35 (0.5%)
White	659 (67.2%)	174 (61.9%)	3935 (60.7%)	4768 (61.5%)
Unknown	0 (0.0%)	0 (0.0%)	1 (0.0%)	1 (0.0%)
Total	981 (100%)	281 (100%)	6488 (100%)	7750 (100%)

SAT Composite Score and Grade Point Average at Sophomore Standing

Table 7 summarizes SAT composite score data for each group and for the cohort. The cohort mean score was 1218.7 (*SD*=147.8) compared to 1245.3 (*SD*=134.9) for participants, 1231.2 (*SD*=140) for applicants and 1214.2 (*SD*=149.6) for non-participants. Independent samples *t*-tests were used to determine if mean differences in SAT composite score were statistically significant between groups. A histogram of mean frequencies indicated a normal distribution of means for this variable. A Levene test for equality of variances indicated unequal variances between participants and non-participants, F (1, 7469) = 15.9, $p < .000$, therefore the *t*-test to compare mean SAT composite scores for these groups was based on adjusted degrees of freedom, and indicated a significant difference at the .05 level, t (1371) = 6.65, $p = .000$. Variances were equal between non-participants and applicants and between applicants and participants, and *t*-test results were not significant at the .05 level in either case, indicating that observed differences in SAT scores were not statistically significant. Based on these analyses, only participants and non-participants had statistically significant differences in mean SAT composite score.

The mean grade point average (GPA) for this cohort was 3.17 at the point when students attained sophomore standing or at the conclusion of their first semester, for those who entered as sophomores or above. In contrast, the mean GPA was 3.44 for participants, 3.35 for applicants, and 3.12 for non-participants. Calculations excluded 453 individuals who were missing data for this variable. Data on mean GPAs by study abroad status are described in Table 8.

Table 7

SAT Composite Score by Study Abroad Status

	Participant (*n*=981)	Applicant (*n*=281)	Non-Participant (*n*=6488)	Cohort (*n*=7750)
Mean	1245.3	1231.2	1214.2	1218.7
Median	1250	1240	1220	1220
Mode	1220	1300	1220	1220
Standard deviation	134.9	140	149.6	147.8
Minimum	780	870	590	590
Maximum	1600	1560	1600	1600

Table 8

GPA at Sophomore Standing by Study Abroad Status (Frequency and Percentage)

	Participant (*n*=981)	Applicant (*n*=280)	Non-Participant (*n*=6037)	Cohort (*n*=7297)
Mean	3.44	3.35	3.12	3.17
Median	3.53	3.46	3.2	3.27
Mode	4.0	4.0	4.0	4.0
Standard deviation	0.46	0.51	0.63	0.62
Minimum	1.64	1.58	0.0	0.0
Maximum	4.0	4.0	4.0	4.0

A one-way analysis of variance (ANOVA) comparing mean GPAs between groups was statistically significant, F (2, 7294) = 126.00, p = .000. Because histograms indicated a non-normal distribution of GPAs within and across groups, a non-parametric test was run as a follow up to verify if findings were significant. Results of a Kruskal-Wallis test were also significant, F (2, N = 7297) = 239.24, p = .000, therefore the initial

ANOVA results were assumed to be accurate and Tukey's HSD was used for post hoc analysis of GPA differences between groups. Results indicated that significant differences existed in the average GPA between participants and non-participants and between applicants and non-participants, while participants and applicants did not have statistically different GPAs. Post hoc test results are summarized in Table 9.

Table 9

Post Hoc Comparison of mean GPAs by Study Abroad Status

GPA Sophomore
Tukey HSD

(I) SA Status	(J) SA Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Non-Participant	Applied	-.23151*	.03722	.000	-.3188	-.1443
	Participant	-.31557*	.02097	.000	-.3647	-.2664
Applied	Non-Participant	.23151*	.03722	.000	.1443	.3188
	Participant	-.08406	.04126	.103	-.1808	.0127
Participant	Non-Participant	.31557*	.02097	.000	.2664	.3647
	Applied	.08406	.04126	.103	-.0127	.1808

*. The mean difference is significant at the 0.05 level.

Study Abroad Program Type, Length, and Classification at Participation

Among the 981 individuals who studied abroad once as undergraduates, participation occurred most frequently in faculty-led programs (*n*=446, 45.5%), followed by affiliated programs (*n*=369, 37.6%) and exchange programs (*n*=166, 16.9%). Over

half of participants went abroad on short-term programs (*n*=552, 57.3%); mid-length programs enrolled 38.6% (*n*=379) while long-term programs enrolled 4.1% (*n*=40). These proportions closely paralleled national participation rates by length of program, where short-term programs represented 56.3% of enrollments, mid-length programs represented 39.5% of enrollments and long-term programs represented 4.2% of enrollments in 2007-2008 (Bhandari & Chow, 2009, p.21). Figure 1 shows the relative proportion of each program length option within program type categories.

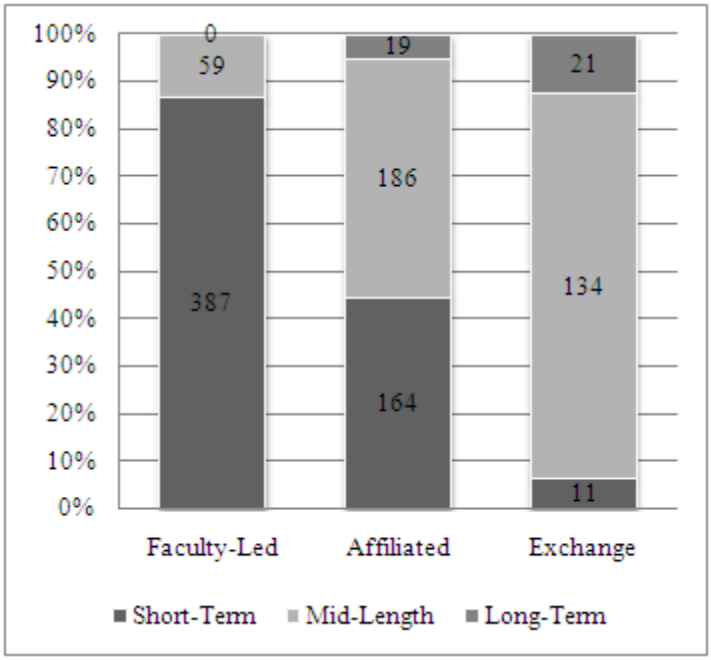

Figure 1. Participation by program length within program type (frequency and percentage).

The demographic makeup of participants differed between program types and for programs of different lengths. Figure 2 details the frequencies and proportions of female and male participants by program type and length. Women and men represented 69.2% and 30.8% of all participants respectively, yet participation rates between different types

of programs were quite variable. Men were overrepresented among exchange participants by 5.3% (*n*=60, 36.1%) while women were overrepresented among affiliated program participants by 3.4% (*n*=268, 72.6%). The proportion of women and men enrolled in faculty-led programs paralleled the overall participation rate at 68.4% and 31.6% respectively. When participation by gender was examined by program length, the proportion of men and women in short-term and mid-length programs were similar to the average for all participants, where women comprised 69.9% and 68.9% respectively. In contrast, women were underrepresented by 7.4% among long-term participants. Chi-square analyses did not indicate significant differences in length or type of program in which men and women enrolled.

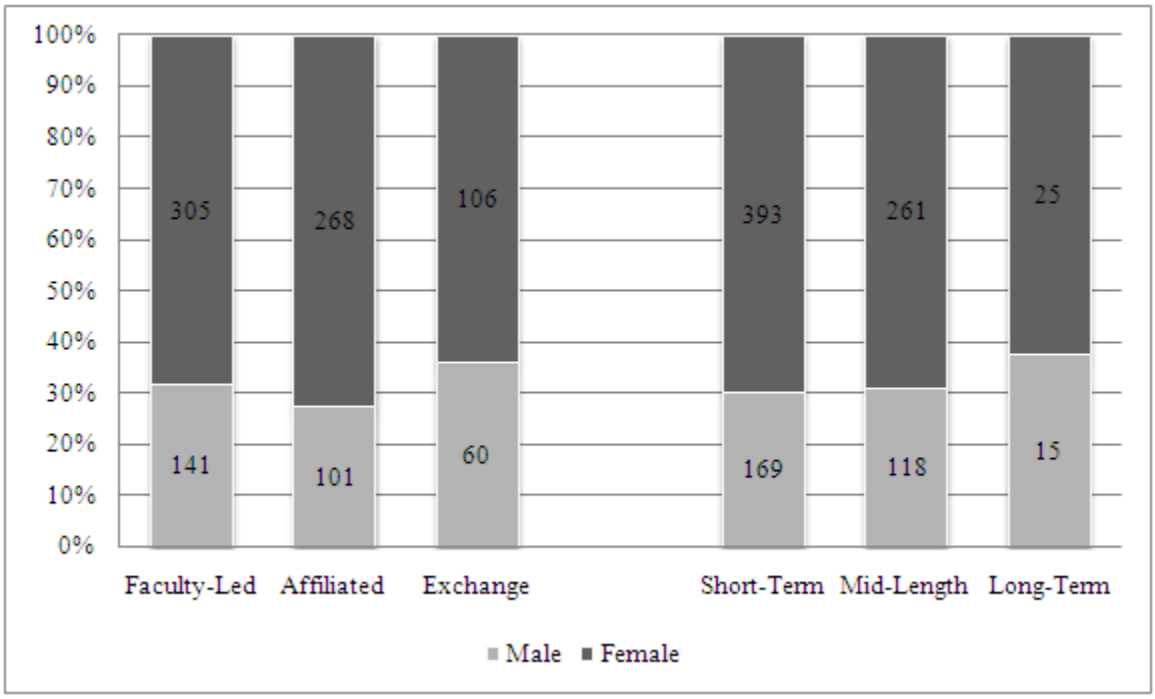

Figure 2. Gender of participants by program type and length (frequency and percentage).

Enrollment by racial and ethnic group also demonstrated variability based on program type and length when compared to mean values among participants. Figure 3 displays the frequency and percentage of participation by program type within each racial/ethnic group. The greatest disparity occurred among Asian American students, who represented 40.4% of exchange participants yet only 18.1% of participants overall. White students were underrepresented among exchange participants by 19% and overrepresented by 3.9% in faculty-led programs and by 3.8% in affiliated programs. Like White students, Hispanic students were underrepresented in exchanges (-3.5%), but only slightly overrepresented as a proportion of faculty-led and affiliated participants (+0.9% and +0.6% respectively). Nearly two-thirds of African American participants enrolled in faculty-led programs, although their overall proportion was low due to the small group size.

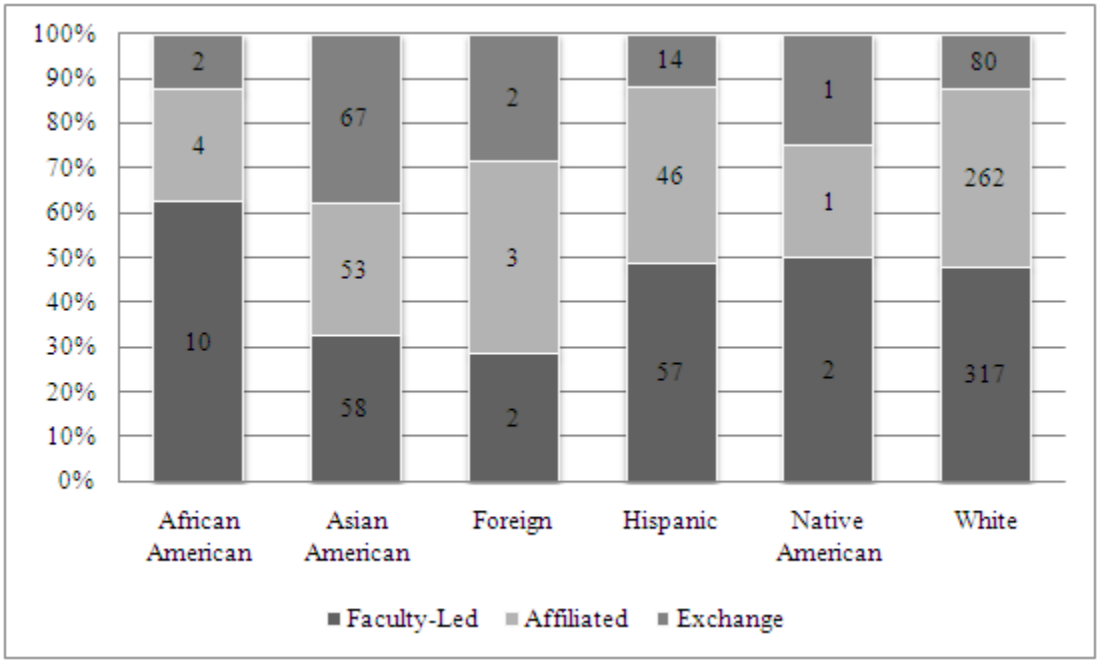

Figure 3. Race/ethnicity of participants by program type (frequency and percentage).

The frequency and percentage of participants by race or ethnicity and length of program are described in Figure 4. Although Asian American participants represented 18.1% of the entire group, they constituted 25.9% of the mid-length group (+7.8%) and 30% of long-term participants (+11.9%). White students comprised the largest proportion of participants in short-term programs (72.4%), 5.2% higher than their representation overall among participants. Like Asian American participants, Hispanic students were overrepresented among long-term participants (+5.6%). Although African American participants represented less than 2.5% of any one category, over 80% enrolled in short-term programs, which reflects in part the tendency for faculty-led programs to be short-term. It is worth noting that no African American, Native American, or Foreign participants took part in long-term programs.

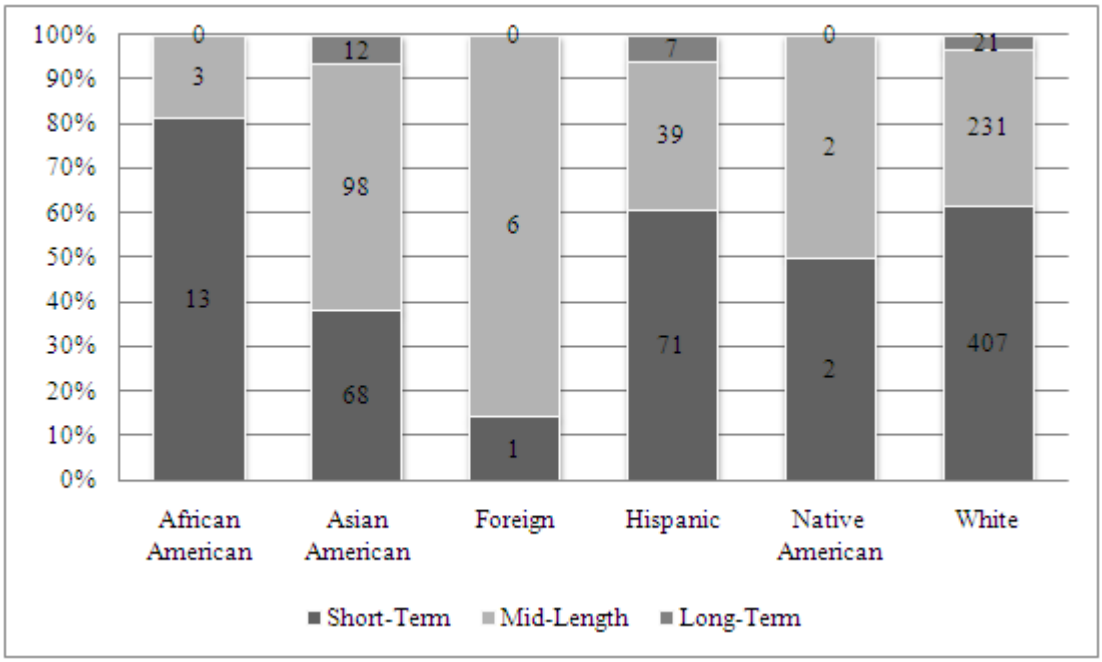

Figure 4. Race/ethnicity of participants by program length (frequency and percentage).

When participation was examined by classification at the point when the student studied abroad, seniors comprised the largest group of participants (*n*=565, 57.6%). Juniors represented 33.6% of participants (*n*=330), followed by sophomores (*n*=74, 7.5%), and freshmen (*n*=12, 1.2%). Eligibility criteria determined enrollment for underclassmen; freshmen were only eligible for one type of short-term, faculty-led program, and therefore their participation was entirely within these categories. Many exchange programs require completion of the sophomore year, so it was not surprising that sophomores represented only 2.4% of exchange participants. Participation proportions based on classification were markedly difference from national trends. In 2007-2008, juniors represented the largest group abroad (35.9%), followed by seniors (21.3%), sophomores (13.1%), and freshmen (3.5%) (Bhandari & Chow, 2009). Figure 5 displays the frequency and proportion of participants by program type and length within undergraduate classifications.

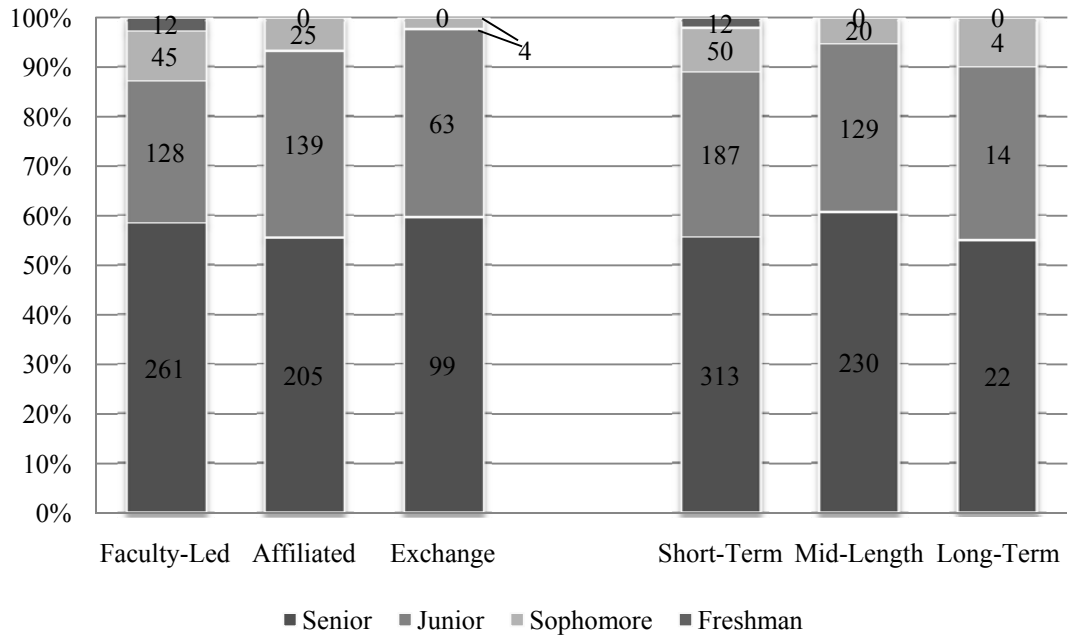

Figure 5. Classification of participants by program type and length (frequency and percentage).

Research Question 1: Study Abroad Participation and Degree Completion

Research question one investigated whether a relationship exists between study abroad participation and degree completion. Results for each sub-question are presented separately below.

Research Question 1.a.

Do degree completion rates differ between study abroad participants, applicants, and non-participants?

Over the eight year period for which data were available, study abroad participants had the highest graduation rate at 97.5% compared to applicants at 93.6% and non-participants at 77.2%. Almost 60% of participants graduated in four years compared to 57.3% of applicants and 44.9% of non-participants. Participants also had the highest degree completion rates at five and six years post-admission, followed by applicants and non-participants. Table 10 summarizes degree completion rates of participants, applicants, and non-participants at four, five, six, and eight years post-admission.

Table 10

Degree Completion Rates by Study Abroad Status (Frequency and Percentage)

	Participant (*n*=981)	Applicant (*n*=281)	Non-Participant (*n*=6488)
Graduated in 4 Years	587 (59.8%)	161 (57.3%)	2912 (44.9%)
Graduated in 5 Years	887 (90.4%)	233 (82.9%)	4500 (69.4%)
Graduated in 6 Years	937 (95.5%)	253 (90.0%)	4821 (74.3%)
Graduated in 8 Years	958 (97.5%)	263 (93.6%)	5011 (77.2%)

Chi-square tests of independence were used to assess if observed differences in degree completion rates between participants, applicants, and non-participants were statistically significant. Analyses were then rerun to determine if differences were consistent at four, five, and six years post-admission, time periods which match the degree completion reporting benchmarks universities are required to provide to the public. Data for these analyses met the assumption of a minimum expected cell count of five.

Overall graduation rates were found to be significantly different between the three groups, χ^2 (3, N=6230) = 8.07, p = .000. When chi-square results are significant, the effect size can help inform whether the difference is meaningful. This is particularly important for analyses using a large *n* since large samples allow for very small differences to be identified through statistical analysis. Effect sizes for the current study are reported using two different measures depending on the number of levels for each variable. For chi-square tests with 2 x 2 tables (two levels of each variable examined), the *phi* coefficient reflects effect size. *Phi* values between 0.10 and 0.30 indicate a small effect, values of 0.30 to 0.50 indicate a medium effect, and values above 0.50 indicate a large effect. However, for chi-square tests with tables larger than 2 x 2, as in the current analysis, Stern (2010) recommends converting Cramér's V values, which SPSS computes, to *w* values for a more accurate interpretation of effect size. The same ranges listed above are used to interpret effect sizes for *w*. In the current analysis, the *w* value is 0.18, indicating a small effect size. Chi-square results for overall degree completion are presented in Table 11.

Table 11

Crosstabulation: Degree Completion by Study Abroad Status

			Graduated		
			Did not Graduate	Graduated	Total
SA Status	Non-Participant	Count	1477	5011	6488
		% within SA Status	22.8%	77.2%	100.0%
		% within Graduated	97.2%	80.4%	83.7%
		Adjusted Residual	15.8	-15.8	
	Applicant	Count	18	263	281
		% within SA Status	6.4%	93.6%	100.0%
		% within Graduated	1.2%	4.2%	3.6%
		Adjusted Residual	-5.7	5.7	
	Participant	Count	25	956	981
		% within SA Status	2.5%	97.5%	100.0%
		% within Graduated	1.6%	15.3%	12.7%
		Adjusted Residual	-14.4	14.4	
Total		Count	1520	6230	7750
		% within SA Status	19.6%	80.4%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Graduation status was then compared at four, five, and six years to determine if the relationship and size of the effect were consistent over time. Chi-square analyses revealed a statistically significant relationship at the .000 level for each time period examined. Although the effect size remained within the small range, it did increase in

each analysis through graduation at six years after admission and then plateaued. Figure 6 displays the change over time in degree completion for the three groups with *w* values listed beneath each year on the *x*-axis.

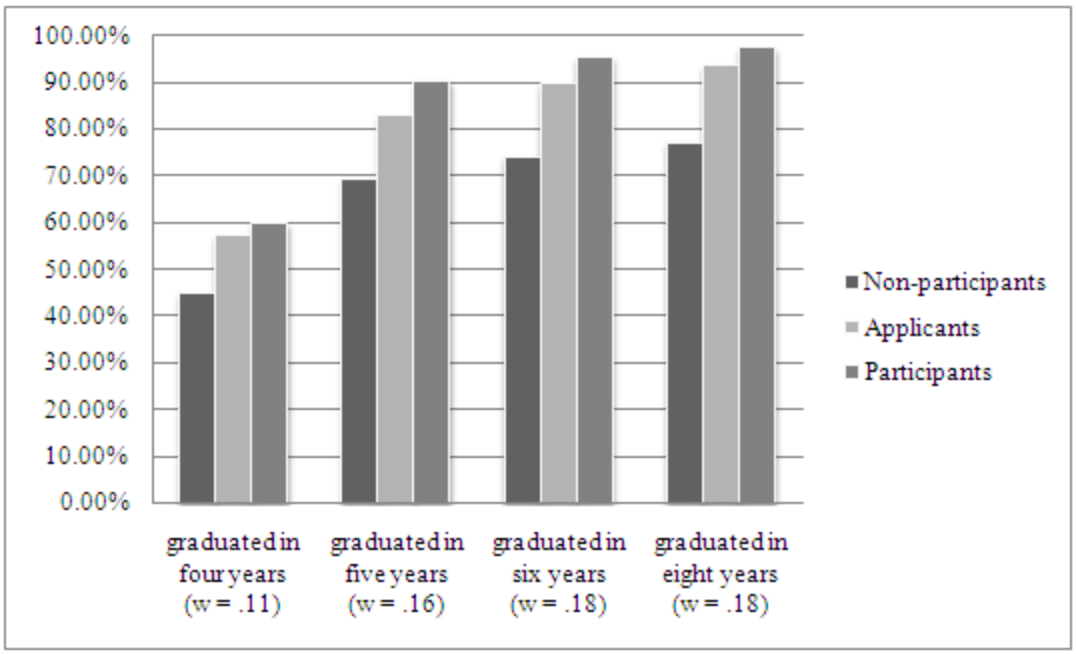

Figure 6. Comparison of degree completion rates by study abroad status.

Additional pairwise chi-square tests were conducted to investigate differences in degree completion rates between participants, applicants, and non-participants. A statistically significant, positive association existed between study abroad participation and degree completion in eight years in comparison to non-participants, χ^2 (1, N=7469) = 76.53, p = .000, *phi* = .17, and to applicants, χ^2 (1, N=1262) = 9.88, p = .002, *phi* = .09. In fact, significant relationships were found in all pairwise analyses at each level, except for the comparison of four year graduation rates between participants and applicants. Table 12 summarizes the significance levels and *phi* effect size values for all pairwise

analyses based on degree completion at four, five, six, and eight years. Significant crosstabulations are included in the appendices.

Table 12

Summary of Results for Degree Completion Pairwise Comparisons

		Graduated in 4 Years		Graduated in 5 Years		Graduated in 6 Years		Graduated in 8 Years	
		Sig.	*phi*	Sig.	*phi*	Sig.	*w*	Sig.	*phi*
Participants	Non-Participants	.000	.101	.000	.159	.000	.170	.000	.170
Participants	Applicants	.45		.000	.099	.000	.098	.002	.088
Applicants	Non-Participants	.000	.050	.000	.059	.000	.072	.000	.079

The largest effect sizes occurred in comparisons of participants and non-participants at six and eight years after admission (*phi* = .17) and were small in size. Although most chi-square tests yielded significant results, based on the *phi* values, the effect was most likely insignificant when comparing non-participants to applicants, and applicants to participants. This suggests that these groups create a scale where degree completion rates increase with the change in category from non-participant to applicant to participant.

Research Question 1.b.

Do degree completion rates differ for the target groups when compared by students' gender, race/ethnicity, SAT composite score, GPA at sophomore standing, and college?

In order to determine if study abroad participation had a net effect on degree completion, it was necessary to introduce into the analyses additional background variables also known to correlate to graduation. For these analyses, the applicant and non-participant categories were collapsed, ensuring a direct comparison of participants to all non-participants. Although the college of enrollment was originally intended to be among the background variables included in these analyses, it was not possible to establish a meaningful value for this category due to limitations of the data itself. Specifically, data secured from the UT Austin Data Warehouse indicated the college of admission and the college from which graduates received their degree. However, there was no way to determine the actual college in which students were last enrolled for individuals who did not graduate within eight years of admission. In addition, the data did not indicate double majors in the cohort, so that even data on college of graduation could only present part of the picture in terms of students' degrees. It was also necessary to run this analysis on only four groups by race/ethnicity because of multiple low cell count issues. Data were dummy coded to include only African American, Asian American, Hispanic, and White students, with White students serving as the reference group.

One of the goals of this research was to determine the specific effect, if any, of study abroad on degree completion. To increase the predictive accuracy of this model, three new variables were created to assess the interaction of SAT composite score range, GPA range at sophomore standing, and gender with study abroad participation. Interaction effects are simply the product of one variable multiplied by another variable. By including interaction effects, it is possible to determine if any effect of study abroad

participation may have been caused in part by another variable, such as a higher average GPA among participants versus non-participants. Both standardized test scores and GPA are known to positively predict degree completion, and study abroad participants had higher average SAT composite scores and GPAs than did non-participants in the 2002 cohort. The interaction between gender and participation was included because female students are more likely to graduate in comparison to male students and are also more likely to study abroad. Inclusion of the interaction between gender and participation ensured that if participation had an effect on degree completion, it was possible to evaluate whether the effect was due to the overrepresentation of women among participants. Interaction effects were not included for race and ethnicity categories since any differences were more likely to stem from factors related to socio-economic status.

Variables were also examined for multicollinearity to ensure that the predictive value of one variable was not closely related to the predictive value of another variable. Although it is not possible to compute multicollinearity for logistic regression, the collinearity diagnostic feature of the linear regression function in SPSS can be used for this purpose. Multicollinearity was not observed between the original variables (gender, race/ethnicity groups, participation in study abroad, GPA ranges, and SAT ranges). Multicollinearity was observed once the interaction variables were included because each independent variable (gender, SAT ranges, and GPA ranges) also occurred in the interactions themselves. When multicollinearity is observed, centering data is a common approach to overcoming the problem (Yu, Winograd, Andrews, DiGangi & Jannasch-Pennell, n.d.). Centered data recalculates the mean of the original variable so that the new variable has a mean of zero, and variable values represent their standard deviation

from the original mean. Data for SAT range and GPA range were centered to yield means of zero, and then interaction effects were recalculated using the centered version of each variable. Gender cannot be centered because it only has two categories, male and female. A second collinearity diagnostic using the new centered variables and interactions showed that multicollinearity had been resolved, with all variance inflation factor (VIF) values less than 4.0 and tolerance values above 0.2 (Garson, 2011).

Logistic regression was used to assess the ability of variables included in the model to predict degree completion overall (within eight years) and at four, five, and six years post-admission. The following independent variables were entered simultaneously into the equation: study abroad participation, race/ethnicity (African American, Asian American, Hispanic, and White), GPA range at sophomore standing, SAT composite score range, gender, the interaction of GPA range and participation, the interaction of SAT range and participation, and the interaction of gender and participation. Table 13 displays the parameter estimates for predicted graduation overall. Results were statistically significant (p=.000) and five independent variables were significant predictors of graduation within eight years at the .05 level: study abroad participation (positive), being Hispanic (negative), GPA range (positive), SAT range (negative), and being female (positive).

Results of this analysis showed that study abroad was a positive predictor of degree completion overall, and that this effect was not a result of differences in GPA, SAT scores, or gender between participants and non-participants. The odds ratio indicates that when other factors were held constant, the predicted probability of

Table 13

Parameter Estimates for Predicted Probability of Graduating in Eight Years

	B	S.E.	Wald's χ^2 (*df*=1)	Sig.	Exp(B) (odds ratio)
Constant	2.009	.067	887.296	.000	7.456
Participated	2.076	.446	21.658	.000	7.974
African American	-.089	.186	.230	.632	.915
Asian American	-.089	.099	.802	.370	.915
Hispanic	-.520	.104	24.844	.000	.595
GPA Range Centered	.865	.033	677.138	.000	2.376
SAT Range Centered	-.085	.029	8.335	.004	.919
Gender	.266	.080	11.221	.001	1.305
GPA x Part Interaction	-.224	.214	1.092	.296	.800
SAT x Part Interaction	-.283	.182	2.409	.121	.753
Gender x Part Interaction	-.799	.500	2.561	.110	.450

graduating in eight years increased 697% as students moved from the non-participant category to the participant category. Results also indicated that Hispanic students were 40.5% less likely to graduate than White students, the reference group for this analysis, and that women were 30.5% more likely to graduate than men in eight years. Measures of academic ability yielded conflicting results, with GPA a better predictor of degree completion that SAT composite score: each .50 change in GPA increased the probability of degree completion by 137.6%, while each 100-point increase in SAT composite score

decreased the probability of graduating from UT Austin by 8.1%. Inclusion of the independent variables in this model improved the prediction of degree completion in eight years from 85.4% to 87.2% and explained approximately 26% (R^2=.261) of the variance in degree completion rates.

While the overall (eight-year) predictive value of these variables is important, it is more useful to examine degree completion rates using the benchmarks that universities are required to report to the public and the government: the percent of graduates at four, five, and six years after admission. Logistic regression using graduation in four years as the dependent variable also yielded significant results (p=000). Six variables were significant predictors of four-year degree completion at the .05 level: being African American, being Hispanic, gender, GPA range at sophomore standing, the interaction of GPA range and participation, and the interaction of SAT composite score range and participation. This model improved the ability to predict degree completion from 50.3% to 65.8% and accounted for approximately 20% of the variability in the probability of degree completion in four years (R^2=.204). The lower Nagelkerke R^2 value indicates that the predictive ability of the model was somewhat weaker for four-year graduation rates in comparison to eight-year graduation rates. Parameter estimates are displayed in Table 14. The equation to predict degree completion in four years can be stated as: -0.199 + (0.134)(participated) + (-0.364)(African American) + (-0.126)(Asian American) + (-0.409)(Hispanic) + (0.699)(GPA range centered) + (0.034)(SAT range centered) + (0.529)(gender) + (-0.205)(GPA x participated interaction)+ (-0.134)(SAT x participated interaction) + (-0.014)(gender x participated interaction).

Table 14

Parameter Estimates for Predicted Probability of Graduating in Four Years

	B	S.E.	Wald's χ^2 (*df*=1)	Sig.	Exp(B) (odds ratio)
Constant	-.199	.046	18.657	.000	.819
Participated	.134	.133	1.014	.314	1.143
African American	-.364	.156	5.454	.020	.695
Asian American	-.126	.067	3.610	.057	.881
Hispanic	-.409	.079	26.539	.000	.664
GPA Range Centered	.699	.028	631.778	.000	2.012
SAT Range Centered	.034	.022	2.437	.119	1.035
Gender	.529	.058	81.876	.000	1.696
GPA x Part Interaction	-.205	.089	5.279	.022	.815
SAT x Part Interaction	-.134	.060	5.043	.025	.875
Gender x Part Interaction	-.014	.159	.008	.931	.986

Unlike overall graduation rates for this cohort, study abroad participation was not a significant predictor of probable degree completion four years after admission. However, significant effects existed for two race/ethnicity categories, where African American and Hispanic students had a lower predicted probability of graduating in four years than did White students in the cohort (by 30.5% and 33.6% respectively). Female students were 69.6% more likely than male students to graduate within four years of admission. The four-year graduation rate for the entire cohort was 48.03%.

The interaction of GPA range and participation is less straightforward to interpret; therefore the GPA-participant interaction is displayed in Figure 7 to illustrate the nature of the relationship. This figure graphs differences in predicted probability of graduation in four years for White male and female participants and non-participants as GPA changes. It is clear from the graph that through most of the GPA range, participants were more likely to graduate in four years than were non-participants. The probability curves for both genders reveal that individuals with higher GPAs (above 3.25) were more likely to graduate in four years if they remained on-campus. Individuals with lower GPAs were more likely to graduate in four years if they studied abroad, although graduation rates were significantly lower than for their peers with higher GPAs.

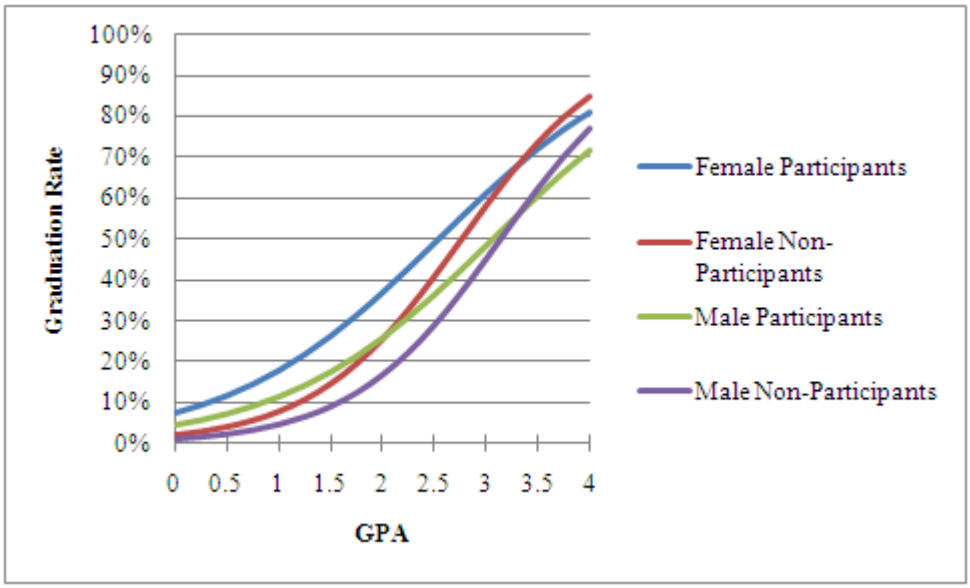

Figure 7. Predicted probability of graduating in four years: Participants and non-participants by gender and GPA.

Similarly, Figure 8 illustrates the complexity of the interaction between SAT composite score range and participation for predicted graduation in four years after admission. For consistency, this interaction is shown across the GPA range using participants and non-participants with SAT composite scores of 1000 and 1400 for comparison. At four years after admission, degree completion rates for non-participants at both SAT composite score levels were almost identical. However, participants at the lower SAT composite score level were more likely to graduate than students at the higher level and than non-participants at almost all GPA ranges. In addition, participants at the higher SAT level with a GPA above approximately 3.25 were less likely to graduate in four years than any of the other groups.

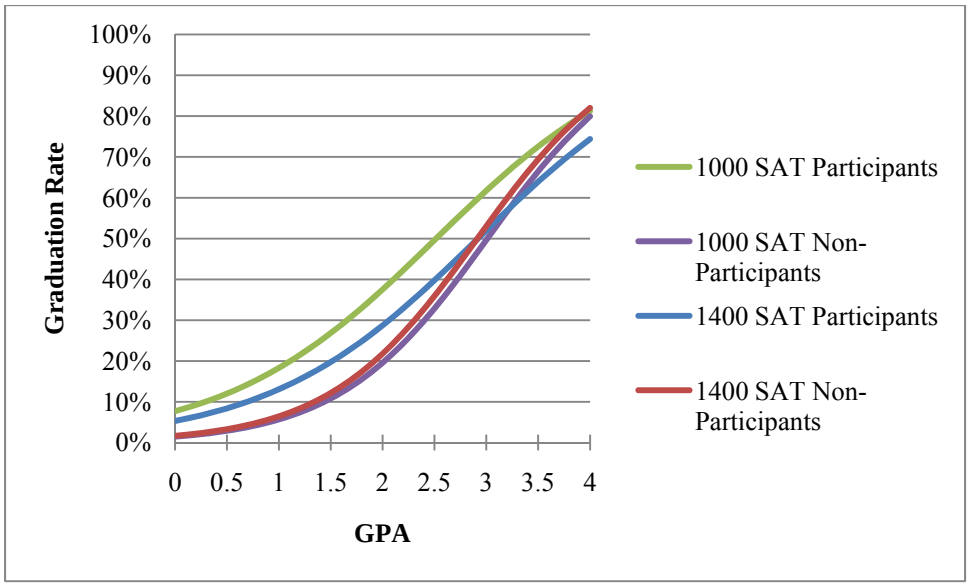

Figure 8. Predicted Probability of Graduating in Four Years: Participants and Non-Participants by SAT and GPA

The same analysis was run to assess predicted probability of graduation within five years of admission. The resulting model was a statistically significant predictor of

five year degree completion rates (p=.000) and yielded six variables with a significant effect at the .05 level: study abroad participation, being Hispanic, GPA range, gender, SAT composite score range, and the interaction of GPA and participation. This model improved predicted five year degree completion rates from 77.1% to 81.2% and accounted for approximately 25% (R^2=.252) of the variability in degree completion rates. Table 15 displays the parameter estimates for this analysis, and the corresponding equation to predict degree completion in five years can be stated as: 1.332 + (0.492)(participated) + (-0.130)(African American) + (-0.093)(Asian American) + (-0.562)(Hispanic) + (0.835)(GPA range centered) + (-0.073)(SAT range centered) + (0.322)(gender) + (-0.326)(GPA x participated interaction)+ (-0.024)(SAT x participated interaction) + (0.271)(gender x participated interaction).

The six significant predictor variables in this analysis influenced five year degree completion rates between 7% and 130% at each change in variable level. When all other variables were held constant, study abroad participants were 63.5% more likely to graduate in five years than non-participants. Hispanic students were 43% less likely to graduate in five years than White students while women were 38% more likely than men to graduate in five years. Although being African American was a significant factor which decreased the probability of graduating in four years compared to White students, that effect disappeared by five years post-admission. Each 0.50 increase in GPA increased the likelihood of graduating in five years by 130.5% while each 100-point increase in SAT composite score decreased the predicted probability of graduating in five years by 7.1%. Although the interaction of GPA and participation yielded a negative

Table 15

Parameter Estimates for Predicted Probability of Graduating in Five Years

	B	S.E.	Wald's χ^2 (*df*=1)	Sig.	Exp(B) (odds ratio)
Constant	1.332	.056	572.513	.000	3.788
Participated	.492	.183	7.213	.007	1.635
African American	-.130	.165	.621	.431	.878
Asian American	-.093	.083	1.255	.263	.911
Hispanic	-.562	.090	39.333	.000	.570
GPA Range Centered	.835	.030	778.868	.000	2.305
SAT Range Centered	-.073	.025	8.263	.004	.929
Gender	.322	.069	22.110	.000	1.380
GPA x Part Interaction	-.326	.122	7.187	.007	.722
SAT x Part Interaction	-.024	.093	.065	.799	.977
Gender x Part Interaction	.271	.241	1.259	.262	1.311

coefficient, as Figure 9 shows, participants had a higher predicted probability of graduating in five years at all GPA levels when compared to non-participants. Unlike the four-year analysis, the SAT-participation interaction had no significant predictive value for five year degree completion. The five year degree completion rate for FTIC members of this cohort was 72.9%.

The final logistic regression analysis examined predicted probability of degree completion within six years of admission. This model was also a statistically significant predictor of graduation (p=.000), and five variables were significant at the .05 level: study abroad participation, being Hispanic, GPA range, SAT composite score range, and gender. This model increased the predicted probability of graduation from 82.4% to

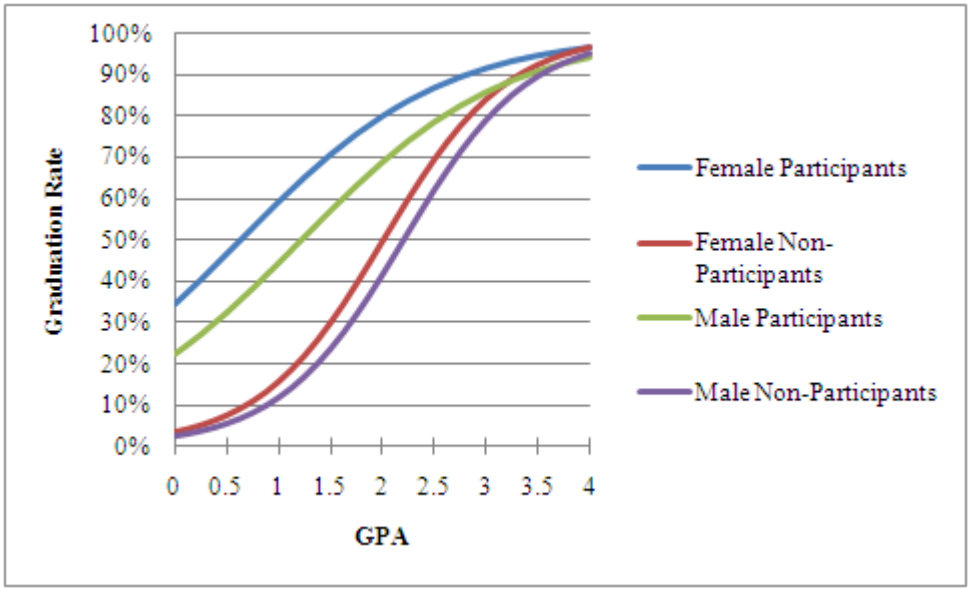

Figure 9. Predicted probability of graduating in five years: Participants and non-participants by gender and GPA.

85.2% and explained approximated 27% (R^2=.269) of the variability in six year graduation rates. Parameter estimates for this analysis are detailed in Table 16, and the corresponding equation to predict degree completion in six years can be stated as: 1.794 + (1.105)(participated) + (-0.157)(African American) + (-0.127)(Asian American) + (-0.658)(Hispanic) + (0.881)(GPA range centered) + (-0.100)(SAT range centered) + (0.264)(gender) + (-0.312)(GPA x participated interaction)+ (0.009)(SAT x participated interaction) + (-0.016)(gender x participated interaction).

At six years post-admission, study abroad participants were 202.1% more likely to graduate than non-participants, and no significant effects were observed between the interactions of participation with GPA range or SAT composite score range. Hispanic students were 48.2% less likely to graduate in six years compared to White students, and female students were 30.2% more likely to graduate in this time frame when

Table 16

Parameter Estimates for Predicted Probability of Graduating in Six Years

	B	S.E.	Wald's χ^2 (*df*=1)	Sig.	Exp(B) (odds ratio)
Constant	1.794	.063	810.820	.000	6.012
Participated	1.105	.271	16.600	.000	3.021
African American	-.157	.177	.794	.373	.854
Asian American	-.127	.093	1.890	.169	.880
Hispanic	-.658	.097	45.795	.000	.518
GPA Range Centered	.881	.032	752.747	.000	2.413
SAT Range Centered	-.100	.028	13.129	.000	.904
Gender	.264	.075	12.396	.000	1.302
GPA x Part. Interaction	-.312	.161	3.739	.053	.732
SAT x Part. Interaction	.009	.129	.005	.945	1.009
Gender x Part. Interaction	-.016	.344	.002	.964	.984

compared to male students. Each 0.5 increase in GPA increased the predicted probability of six-year degree completion by 141.3%, while each 100-point increase in SAT composite score decreased the probability of degree completion in six years by 9.6%. The six year graduation rate for the entire FTIC cohort was 77.8%.

Figure 10 illustrates the predicted probability of graduating in six years for White female and male students at all GPA levels as they move from the non-participant to participant category. The increased likelihood of degree completion in six years when students studied abroad ranged from a low of 1% for 4.0 GPA students to a high of over 50% for students with extremely low (1.0) GPAs at the point when they attained

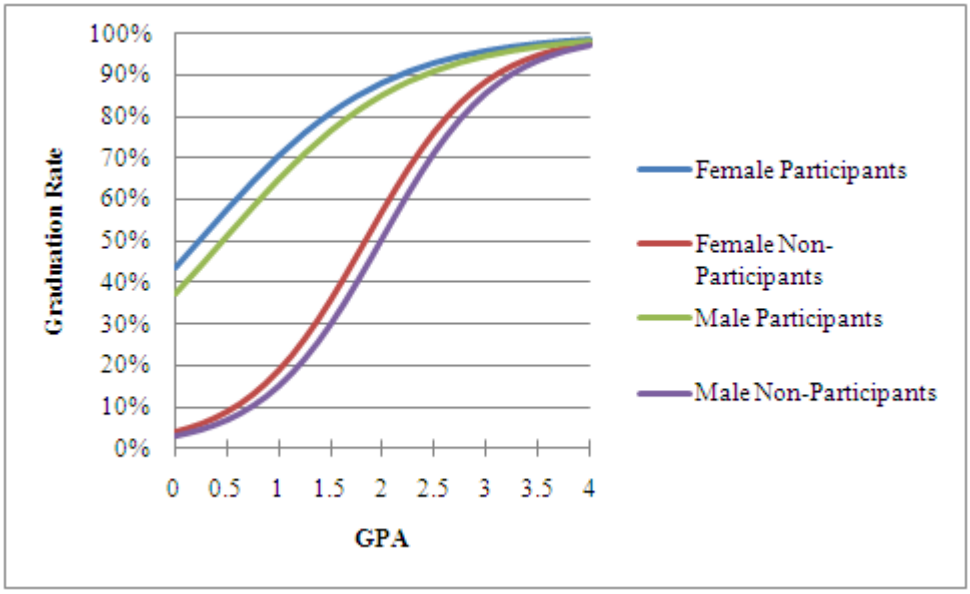

Figure 10. Predicted probability of graduating in six years: Participants and non-participants by gender and GPA.

sophomore standing. This pattern of larger gains as GPA decreased occurred at all measurement points (four, five, six, and eight years post-admission) and grew significantly as the enrollment period increased.

In all analyses, Hispanic students had a lower predicted probability of graduation than their White counterparts in the 2002 FTIC cohort. The discrepancy in graduation rates rose from 33.6% four years post-admission to 48.2% at six years and then decreased to 40.3% overall at eight years post-admission. It is worth examining the effect of study abroad participation on predicted probability of graduating in six years for this group, displayed in Figure 11 for male and female participants and non-participants. Although the effect of participation on predicted degree completion was reduced due to the negative predictive effect of being Hispanic, participants at all GPA levels were more likely to graduate in six years than their peers who did not participate. The difference in

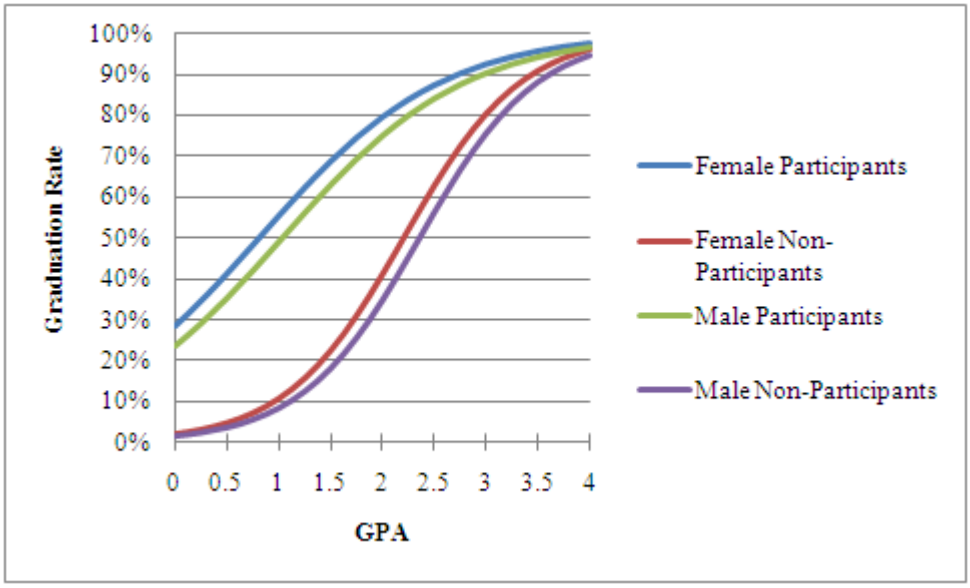

Figure 11. Predicted probability of graduating in six years: Participants and non-participants by gender and GPA.

predicted probability of graduating in six years ranged from less than 2.0% for student with 4.0 GPAs up to 45% for male students with a GPA of 1.5 at the end of their freshman year and up to 46.5% for female students with a GPA of 1.25 at the end of their freshman year.

Table 17 summarizes the significant predictors of degree completion found in this analysis at four, five, six, and eight years post-admission as well as the variance in graduation rates which this model explained. Plus (+) and minus (–) signs indicate whether variables were positive or negative predictors of degree completion within the time period in question. Study abroad participation positively predicted the likelihood of degree completion for all analyses except for graduation within four years of admission.

Variables in these logistic regression analyses cannot account for differences which may be due to the inherent motivation or perseverance of individuals who pursue study abroad. In an effort to assess whether this could be a significant reason for the

Table 17

Summary of Significant Predictors of Graduation and Explained Variance

	Graduated in 4 Years	Graduated in 5 Years	Graduated in 6 Years	Graduated in 8 Years
Participated		+	+	+
African American	–			
Asian American				
Hispanic	–	–	–	–
GPA Range Centered	+	+	+	+
SAT Range Centered		–	–	–
Gender (female)	+	+	+	+
GPA x Participated Interaction	–	–		
SAT x Participated Interaction	–			
Gender x Participated Interaction				
Variance Explained by the Model	20.4%	25.2%	26.9%	26.1%

differences in predicted probability of degree completion, all analyses were rerun omitting participants and instead comparing the original applicant and non-participant groups. To mirror the previous analyses, three new interaction effects were computed for applicant status and GPA range, SAT composite score range, and gender. Although the overall models were significant predictors of the probability of graduating within the timeframe in question (p=.000), results of all analyses indicated no significant differences in predicted probability of graduation between applicants and non-participants overall or for any of the interaction effects. This finding would seem to indicate that the effects observed in logistic regression analyses cannot be completely attributed to differences in motivation or other personal factors which fall outside the factors included in this model.

Research Question 1.c.

Do degree completion rates differ among study abroad participants based on the type of program in which they participated, length of participation or classification (class standing) at the time of participation?

Degree completion by program type. Overall degree completion rates between participants in different program types were remarkably consistent, although this convergence occurred after four years post-admission. Eight years graduation rates were 97.8% for affiliated participants, 97.5% for faculty-led participants, and 96.4% for exchange participants. At four years post-admission, affiliated participants also had the highest graduation rate at 66.1%, but the graduation rate among exchange participants exceeded that of faculty-led program participants at 63.3% and 53.4% respectively.

A chi-square test of independence showed no significant difference in degree completion rate by program type at eight years post-admission, χ^2 (2, N=981) = .99, p = .61. Four-year degree completion rates were significantly different between the three groups with a small effect size, χ^2 (2, N=981) = 14.65, p = .001, w = .12. Five- and six-year analyses yielded no significant differences in degree completion rates across the three groups. Table 18 summarizes graduation rates by program type, significance levels, and effect size, if applicable.

Pairwise comparisons revealed several significant relationships, summarized in Table 19. Affiliated participation was positively associated with four- and five-year degree completion in comparison to faculty-led participation, χ^2 (1, N=815) = 16.61, p = .000, *phi* = .13 and χ^2 (1, N=815) = 4.16, p = .041, *phi* = .07. At four years after admission, the effect size was small and decreased to very small at five years after

Table 18

Degree Completion by Program Type (Percentage, Significance, and Effect Size)

	Faculty-Led (*n*=446)	Affiliated (*n*=369)	Exchange (*n*=166)	Sig.	*w*
Graduated in 4 Years	53.4%	66.1%	63.3%	.001	.12
Graduated in 5 Years	88.1%	92.4%	92.2%	.08	
Graduated in 6 Years	94.2%	96.7%	96.4%	.18	
Graduated in 8 Years	97.5%	97.8%	96.4%	.61	

admission, indicating a potentially inconsequential impact on actual rates of degree completion between these groups. In addition, exchange participants were significantly more likely to graduate in four years than were faculty-led program participants, χ^2 (1, *N*=612) = 4.80, *p* = .028, *phi* = .089. Again, the very small effect size indicates that, though a significant relationship existed, the impact on degree completion rates was marginal. No significant associations existed for six- or eight-year graduation rates, or between affiliated and exchange participants at any point. Crosstabulations for the three significant analyses are included in the appendices.

Table 19

Summary of Results for Degree Completion by Program Type Pairwise Comparisons

		Graduated in 4 Years		Graduated in 5 Years		Graduated in 6 Years		Graduated in 8 Years	
		Sig.	*phi*	Sig.	*phi*	Sig.	*phi*	Sig.	*phi*
Affiliated	Faculty-Led	.000	.129	.041	.071	.082		.779	
Exchange	Faculty-Led	.028	.089	.151		.274		.442	
Exchange	Affiliated	.519		.922		.820		.332	

Degree completion by program length. Graduation rates by program length showed slightly more variability than analyses by program type. Eight year graduation rates were 97.5% for short-term program participants, 97.5% for mid-length participants and 93.5% for long-term participants. However, four years after admission, only 35% of long-term participants had graduated compared to 60.7% of short-term and 61.2% of mid-length program participants. Long-term participant graduation rates lagged behind the other categories in all analyses while short-term and mid-length participant graduation rates were similar at all levels.

Multiple significant associations emerged for degree completion by program length. Eight-year graduation rates were not significantly different between participants in programs of different lengths, χ^2 (2, N=981) = 4.25, p = .120. However, significant relationships existed for four-year, χ^2 (2, N=981) = 10.73, p = .005, w = .11, five-year, χ^2 (2, N=981) = 16.10, p = .000, w = .13, and six-year graduation rates, χ^2 (2, N=981) = 7.67, p = .022, w = .09. The effect size was again small or very small, but changes in the effect size between four, five, and six years indicated that any effect of program length on degree completion peaked at five years and then declined. Percent of graduates by program length and years to degree completion, as well as significance and effect size, are provided in Table 20.

In keeping with the observed similarity in degree completion rates for participants in short-term and mid-length programs, no significant associations were found in pairwise analyses of degree completion rates between these groups. In pairwise comparisons of mid-length and long-term participants, significant differences in

Table 20

Degree Completion by Program Length (Percentage, Significance, and Effect Size)

	Short-Term (*n*=562)	Mid-Length (*n*=379)	Long-Term (*n*=40)	Sig.	*w*
Graduated in 4 Years	60.7%	61.2%	35.0%	.005	.11
Graduated in 5 Years	91.8%	90.2%	72.5%	.000	.13
Graduated in 6 Years	95.2%	96.8%	87.5%	.02	.09
Graduated in 8 Years	97.5%	97.9%	92.5%	.12	

graduation rates existed at all levels, and significant differences existed between short-term and long-term participants for four-, five- and six-year graduation rates. Significance levels and effect sizes for pairwise comparisons by program length are detailed in Table 21. The strongest effect of program length occurred in five-year graduation rates for comparisons of short-term and long-term participants, χ^2 (1, *N*=602) = 16.25, *p* = .000, *phi* = -.16, and for mid-length and long-term participants, χ^2 (1, *N*=419) = 11.22, *p* = .001, *phi* = -.16. The effect size was small for all analyses, with the largest effect at five years and decreasing thereafter. These results indicate that participants in long-term programs graduated at lower rates than short-term and mid-length program participants. In contrast, short-term and mid-length participants had no discernible difference in degree completion rates.

Degree completion by classification at participation. The final analyses of degree completion among study abroad participants examined outcomes based on classification at the time of participation. Due to the low sample size for freshmen (*n*=12), pairwise analyses between freshmen and sophomores were examined first to

Table 21

Summary of Results for Degree Completion by Program Length Pairwise Comparisons

		Graduated in 4 Years		Graduated in 5 Years		Graduated in 6 Years		Graduated in 8 Years	
		Sig.	*phi*	Sig.	*phi*	Sig.	*phi*	Sig.	*phi*
Long-Term	Mid-Length	.001	-.156	.001	-.164	.004	-.139	.04	-.099
Long-Term	Short-Term	.001	-.130	.000	-.164	.029	-.089	.07	
Short-Term	Mid-Length	.87		.40		.26		.71	

determine if the two groups could be merged to facilitate data analysis and interpretation. Combining levels also reduced the possibility of Type II error as one cell (25.0%) for freshmen had an expected cell count below five. No significant differences were found in overall (eight year) degree completion rates, χ^2 (1, N=86) = .016, p = .90, or at any other level, therefore the two categories were combined into the "underclassman" category.

Eight-year graduation rates by classification demonstrated the greatest variation among the sub-analyses of degree completion for program participants. Not surprisingly, individuals who studied abroad as seniors experienced the highest eight-year degree completion rate at 98.2%, followed by juniors at 97.9%, while 90.7% of individuals who studied abroad as underclassmen graduated within the same timeframe. These differences were significant at the .05 level, χ^2 (2, N=981) = 17.42, p = .000, w = -.13. At four years, the picture was somewhat different: juniors had the highest graduation rate at 67%, followed by seniors at 56.6%, and underclassmen at 53.5%. Four-year graduation rates were also significantly different based on classification, χ^2 (2, N=981) = 17.42, p = .000, w = -.13. As Table 22 shows, a significant association also existed between degree

Table 22

Degree Completion by Classification at Participation (Percentage, Significance, and Effect Size)

	Underclassman (*n*=86)	Junior (*n*=330)	Senior (*n*=565)	Sig.	*w*
Graduated in 4 Years	53.5%	67%	56.6%	.004	.11
Graduated in 5 Years	82.6%	92.7%	90.3	.017	.09
Graduated in 6 Years	87.2%	96.7%	96.1%	.000	.13
Graduated in 8 Years	90.7%	97.9%	98.2%	.000	.13

completion rates and classification five and six years after admission. The effect size was small at each level, but increased steadily for graduation rates from five through eight years, indicating that differences in degree completion outcomes increased as students took longer to graduate.

In pairwise comparisons, underclassmen had significantly lower overall graduation rates than did seniors, χ^2 (1, *N*=651) = 15.75, *p* = .000, *phi* = .16, or juniors, χ^2 (1, *N*=416) = 10.12, *p* = .001, *phi* = .16. As Table 23 describes, underclassmen had significantly lower graduation rates compared to seniors at five and six years after admission and at all time frames when compared to juniors. The effect size for both seniors and juniors in comparison to underclassmen was small in all analyses. In pairwise comparisons of effect size between juniors and underclassmen, the effect peaked for six year graduation rates at *phi* = .17 and then decreased slightly to *phi* = .16 overall, whereas the effect size increased at each degree completion level for senior and underclassmen comparisons. The degree completion rates between juniors and seniors

Table 23

Summary of Results for Degree Completion by Classification at Participation Pairwise Comparisons

		Graduated in 4 Years		Graduated in 5 Years		Graduated in 6 Years		Graduated in 8 Years	
		Sig.	*phi*	Sig.	*phi*	Sig.	*phi*	Sig.	*phi*
Junior	Underclassman	.02	.114	.004	.141	.000	.171	.001	.156
Senior	Underclassman	.583		.032	.084	.000	.137	.000	.156
Senior	Junior	.002	-.102	.21		.668		.71	

was significantly different at four years after admission only, χ^2 (1, *N*=895) = 9.30, *p* = .002, *phi* = -.10.

Summary of Research Question 1 Results

Research question one asked, "Does a relationship exist between study abroad participation and degree completion?" Three sub-questions explored different possible relationships between study abroad participation and degree completion four, five, six, and eight years after admission to the university. Question 1.a. investigated differences in degree completion rates between study abroad participants, applicants, and non-participants, and found that participants and applicants were significantly more likely to graduate than non-participants for each timeframe examined, while participants were significantly more likely to graduate than applicants for all timeframes except four years post-admission. Question 1.b. explored the effect of multiple variables in predicting the probability of graduation. These results indicated that study abroad participation significantly and positively affected the predicted probability of graduating in five, six, and eight years after admission. GPA range, SAT composite score range, gender, and

race/ethnicity variables were also significant positive or negative predictors of degree completion in multiple analyses, as were the interaction of GPA and participation and SAT range and participation. Question 1.c. examined differences in degree completion among participants, and found significant differences when participants were compared based on program type, program length, and classification at the time of participation.

Research Question 2: Study Abroad Participation and Time-to-Degree

Students often express concern that study abroad participation will delay graduation. Research question two examined this issue by comparing time-to-degree between participants and non-participants and among sub-groups of participants. The three sub-questions are addressed individually below.

Research question 2.a.

Does time-to-degree differ between study abroad participants, applicants, and non-participants?

Table 24 reports the frequency and percentage of graduates among participants, applicants, and non-participants by the number of years of attendance. The highest proportion of degree completions occurred for all groups in the fourth year of attendance: 57.9% of participants, 53.7% of applicants and 40.6% of non-participants graduated within this timeframe. Time-to-degree was calculated using elapsed calendar years, in which 3.66 years equates to the traditional four-year timeframe associated with bachelor's degree completion, therefore the large percentage of individuals in this group is consistent with UT data reported for degree completion in four years or less (IMA, 2009a). Degree completion occurred at the second highest rate in the fifth year of attendance. Graduation rates for participants were consistently higher than the other

Table 24

Time-to-Degree by Study Abroad Status (Frequency and Percentage)

	Participant (*n*=956)	Applicant (*n*=263)	Non-Participant (*n*=5011)
3.00 years or less	19 (1.9%)	10 (3.6%)	275 (4.2%)
3.33 – 4.00 years	568 (57.9%)	151 (53.7%)	2637 (40.6%)
4.33-5.00 years	301 (30.7%)	72 (25.6%)	1588 (24.5%)
5.33 – 6.00 years	50 (5.1%)	30 (7.1%)	321 (4.9%)
6.33 – 7.00 years	15 (1.5%)	6 (2.1%)	137 (2.1%)
7.33 – 8.00 years	3 (0.3%)	4 (1.4%)	53 (0.8%)
Total	956 (97.5%)	263 (93.6%)	5011 (97.2%)

groups at each one year interval. The mean time-to-degree for participants was 4.11 years (*SD*=0.70) compared to 4.17 years for applicants (*SD*= 0.87) and 4.16 years for non-participants (*SD*=0.86). The median and mode were identical for all three groups at 4.00 and 3.66 years respectively. The mean time-to-degree for all FTIC graduates in the 2002 entering cohort was 4.15 years (*SD*=.84).

Degree completion rates were very small at the lower and upper timeframes, with less than 5.0% of students graduating in three years or less or in more than six years. Because completion rates dropped off at the upper and lower ends of the range, and to facilitate analysis of time-to-degree between groups, several time frames were collapsed and recoded. The interval "3.00 years or less" was collapsed with "3.33-4.00 years" into a new category, "4.00 years or less". Similarly, "6.33 – 7.00 years" and "7.33 – 8.00 years" were collapsed to form the category "more than 6.00 years." These adjustments

have the added benefit of creating time-to-degree categories which parallel the typical degree reporting timeframes of four, five, and six years post-admission.

In addition, it was necessary to collapse the groups "applicant" and "non-participant" for this set of analyses in order to generate useful data. Although results from the prior analyses of degree completion indicated that outcomes for applicants were significantly different from participants or non-participants, initial analyses for time-to-degree comparing applicants to participants and then to non-participants showed no significant differences, χ^2 (3, N=1219) = 2.97, p = .40 and χ^2 (3, N=5274) = 0.25, p = .97 respectively. Applicants are a sub-group of non-participants, and given that no significant relationships were observed which included applicants as an independent group, the researcher preferred to retain them in the dataset by merging them into a new category called "all non-participants" instead of omitting them.

Chi-square analysis was used to compare time-to-degree for participants and non-participants using whole years as the measure. Because graduation cannot occur in less than .33 increments, ANOVA would not have generated accurate results as it reports mean averages. To maintain consistency and usability, data were analyzed based on whole-year increments as described above. A significant correlation was found at the .05 level between time-to-degree and study abroad participation, χ^2 (3, N=6230) = 8.07, p = .045, w = .04. Crosstabulations are provided in Table 25; adjusted residuals indicate that the greatest difference in time-to-degree occurred for individuals who took more than six years to graduate, and this difference was negatively associated with study abroad participation. In other words, study abroad participation did not delay graduation among individuals in this cohort; in fact, time-to-degree was shorter for participants than non-

Table 25

Crosstabulation: Time-to-Degree by Study Abroad Status

			Grad Year				
			4 Years or Less	5 Years	6 Years	More than 6 Years	Total
SA Status	All Non-Participants	Count	2487	2033	500	254	5274
		% within SA Status	47.2%	38.5%	9.5%	4.8%	100.0%
		% within Grad Year	83.9%	84.7%	85.6%	90.1%	84.7%
		Adjusted Residual	-1.6	.1	.7	2.6	
	Participants	Count	477	367	84	28	956
		% within SA Status	49.9%	38.4%	8.8%	2.9%	100.0%
		% within Grad Year	16.1%	15.3%	14.4%	9.9%	15.3%
		Adjusted Residual	1.6	-.1	-.7	-2.6	
Total		Count	2964	2400	584	282	6230
		% within SA Status	47.6%	38.5%	9.4%	4.5%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%

participants in this analysis. However, the *w* value was below the range for a small effect, indicating that differences in time-to-degree are negligible between participants and non-participants.

Research Question 2.b.

Does time-to-degree differ for the target groups when compared by students' gender, race/ethnicity, SAT composite score, GPA at sophomore standing, and college?

Ordinal logistic regression was used to evaluate the effect of study abroad participation on time-to-degree when compared to non-participants. Consistent with the previous analyses for time-to-degree, whole year increments were used to evaluate the probability that individuals would graduate in four years or less compared to more than four years, five years or less compared to more than five years, and six years or less compared to more than six years. As described in research question 1.b., college was omitted from this analysis due to the inability to account for dual majors, which are very common at UT Austin, and applicants were collapsed into the non-participant group. Race/ethnicity for this question used the same four groups from question 1.b.: African American, Asian American, Hispanic, and White, with White serving as the reference group. Due to the manner in which ordinal regression processes data, dichotomous variables (gender, race/ethnicity variables, participated) had to be reverse coded from previous analyses to ensure that parameter estimates reported results in contrast to the reference groups (White, female, non-participant), and not the reverse.

The ordinal regression model investigated whether study abroad participation, race/ethnicity, gender, GPA range at sophomore standing, or SAT composite score range predicted time-to-degree. For consistency with analyses in question 1.b., interaction effects were included for gender and participation, GPA range and participation, and SAT range and participation. Results were statistically significant (p=.000) and yielded four variables which significantly affect time-to-degree at the .05 level: being Hispanic,

gender, GPA at sophomore standing, and the interaction of GPA and study abroad participation. In this analysis, participation itself did not affect time to degree ($p > .60$). This model accounted for approximately 15% of the variability in time-to-degree (R^2=.152). The parameter estimates for this analysis are provided in Table 26.

Table 26

Parameter Estimates for Predicted Probability of Graduating in Four, Five, Six, or More than Six Years

					95% Confidence Interval	
	Est.	S.E.	Wald	Sig.	Lower Bound	Upper Bound
Threshold:						
≤ 4 Yrs. vs. > 4 Yrs.	-.395	.047	72.048	.000	-.486	-.304
≤ 5 Yrs. vs. > 5 Yrs.	1.743	.053	1083.846	.000	1.639	1.847
≤ 6 Yrs. vs. > 6 Yrs.	3.043	.073	1758.319	.000	2.901	3.185
Location:						
Participated	.036	.093	.149	.699	-.147	.219
African American	.171	.146	1.381	.240	-.114	.456
Asian American	.082	.065	1.585	.208	-.045	.209
Hispanic	.345	.077	19.944	.000	.194	.497
GPA Range Centered	-.447	.077	33.382	.000	-.599	-.295
SAT Range Centered	-.066	.053	1.526	.217	-.170	.039
Gender	-.703	.139	25.450	.000	-.977	-.430
GPA x Part Interaction	-.189	.082	5.331	.021	-.349	-.029
SAT x Part Interaction	-.015	.057	.072	.789	-.126	.096
Gender x Part Interaction	.241	.150	2.573	.109	-.054	.536

Figure 12 displays the difference in predicted time-to-degree between White participants and non-participants at each time boundary. Each line denotes the boundary between the predicted probability of graduating within the target time period (four, five, or six years after admission) versus the likelihood of graduating in more than that amount of time. The graphical representation of the parameter estimates explains the interaction between participation and GPA range at sophomore standing. The greatest difference in predicted time-to-degree between participants and non-participants occurs at the four year boundary line. This indicates that non-participants were more likely to graduate within four year than participants for individuals with GPAs below approximately 3.30, but that participants were more likely to graduate in four years than non-participants for individuals with GPAs above 3.30 when they attained sophomore standing. At most, the difference in likelihood of graduating in four years or less versus more than four years reached 10.5%, and averaged 5.7% across all GPA ranges. The differences between participants and non-participants in predicted probability of time-to-degree were very small in comparisons of five years or less versus more than five years and six years or less versus more than six years. At five years, the average difference was less than 1.0%, and by six years, it was almost non-existent. Across all three boundary lines (graduation within four, five, and six years or more), the predicted probability of graduating within that time frame versus in more time approached parity as GPA range decreased. In other words, at the lowest GPA ranges, students were equally likely to graduate within four, five, six, or more than six years. In contrast, at the highest GPA ranges, the proportion of individuals predicted to graduate continuously increased as time-to-degree increased: 22-27% of 4.0 GPA students were likely to graduate in four years or less versus more than

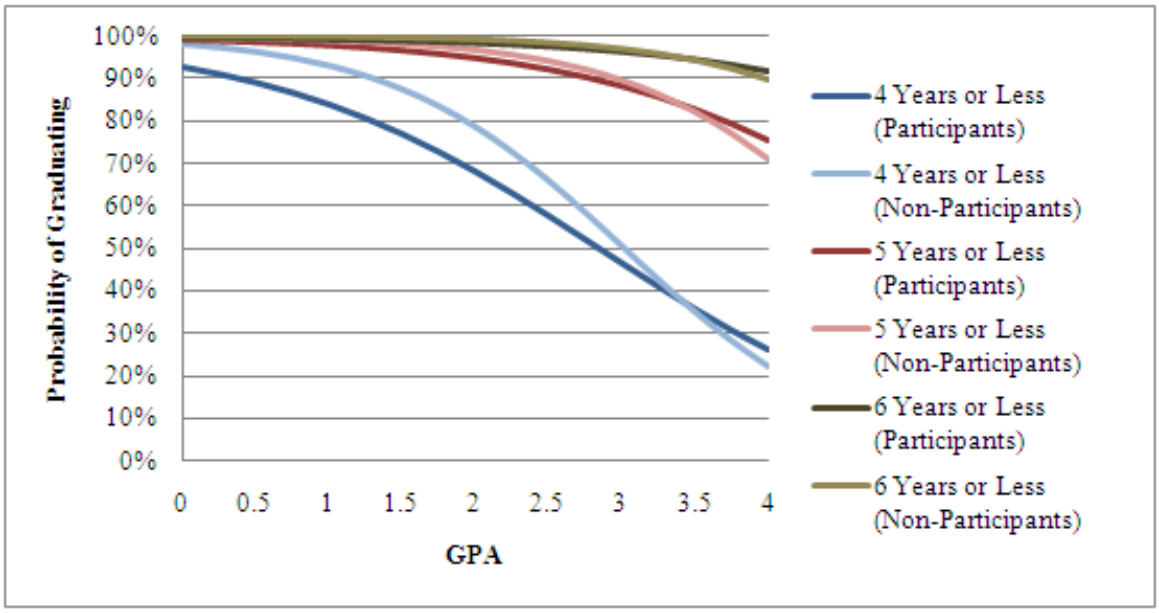

Figure 12. Predicted probability of time-to-degree: Participants and non-participants.

four years, compared to 70-76% within five years, and 88-91% within six years. Participants at the highest GPA levels were predicted to graduate at higher levels than non-participants at each interval level.

The effects of gender and race/ethnicity on predicted time-to-degree were more straightforward. When other variables were held constant, women were predicted to graduate at higher rates than men within each time interval versus taking longer than that amount of time: women were 12.3% more likely to graduate within four years than men, and 4.7% more likely to graduate within five years. By six years, the difference was minimal at 1.5%. The difference in predicted time-to-degree for Hispanic students was less pronounced than differences based on gender. Hispanic students were 8.6% less likely to graduate within four years versus in more than four years in comparison to White students. This differenced decreased to 3.7% for predicted differences in

graduation within five years versus more than five years and by six years, the difference was only 1.2%.

Research Question 2.c.

Does time-to-degree differ among study abroad participants based on the type of program in which they participated, length of participation, or classification at the time of participation?

Time-to-degree by program type. When participants were sub-divided by program type, some differences emerged in average time-to-degree. Faculty-led program participants took an average of 4.21 years to graduate while affiliated participants averaged 4.02 years and exchange participants averaged 3.99 years. The median for faculty-led participants was 4.00 years compared to 3.66 for affiliated and exchange participants, and the mode was the same for all three groups at 3.66 years. Faculty-led participants exhibited the most variability in the length of time it took them to graduate (*SD*=.81) followed by affiliated participants (*SD*=.63) and exchange participants (*SD*=.59). As Table 27 illustrates, chi-square analysis indicated a significant relationship between program type and time-to-degree, χ^2 (6, *N*=956) = 24.70, *p* = .000, *w* = .16.

In pairwise comparisons, a significant difference in time-to-degree existed between participants in faculty-led and exchange programs, χ^2 (3, *N*=595) = 14.38, *p* = .002, *phi* = .16, where exchange participation was positively associated with a shorter period of enrollment prior to graduation. Similarly, a significant, positive relationship was observed between time-to-degree and enrollment in affiliated programs when compared to participants enrolled in faculty-led programs, χ^2 (3, *N*=796) = 16.67, *p* = .001, *phi* = .15. In both cases, a small effect size was observed. No difference was

Table 27

Crosstabulation: Time-to-Degree by Program Type

			Grad Year				
			4 Years or Less	5 Years	6 Years	More than 6 Years	Total
Program Type	Faculty-Led	Count	188	175	53	19	435
		% within Program Type	43.2%	40.2%	12.2%	4.4%	100.0%
		% within Grad Year	39.4%	47.7%	63.1%	67.9%	45.5%
		Adjusted Residual	-3.8	1.1	3.4	2.4	
	Affiliated	Count	196	136	22	7	361
		% within Program Type	54.3%	37.7%	6.1%	1.9%	100.0%
		% within Grad Year	41.1%	37.1%	26.2%	25.0%	37.8%
		Adjusted Residual	2.1	-.4	-2.3	-1.4	
	Exchange	Count	93	56	9	2	160
		% within Program Type	58.1%	35.0%	5.6%	1.3%	100.0%
		% within Grad Year	19.5%	15.3%	10.7%	7.1%	16.7%
		Adjusted Residual	2.3	-1.0	-1.5	-1.4	
Total		Count	477	367	84	28	956
		% within Program Type	49.9%	38.4%	8.8%	2.9%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%

observed in time-to-degree between affiliated and exchange participants, χ^2 (3, *N*=520) = 1.8, $p > .60$.

Time-to-degree by program length. The mean time-to-degree for participants in programs of different lengths exhibited the greatest variation among the sub-analyses for this research question. On average, participants in short-term and mid-length programs took 4.09 years to graduate compared to 4.52 years for long-term program participants. The median and mode for time-to-degree were identical for short-term and mid-length program participants at 3.66 years. In contrast, the median and mode for long-term program participants was 4.33 years. The variation in time-to-degree differed for each group, with mid-length participants displaying the least variance (*SD*=.67) followed by short-term participants (*SD*=.70) and long-term participants (*SD*=.92). A significant relationship between time-to-degree and program length was found, χ^2 (6, *N*=956) = 22.52, $p = .001$, $w = .15$. Table 28 displays the crosstabulation results of time-to-degree by program length.

In pairwise analyses, a significant, positive association existed between length of time to graduation and long-term program participation when compared to mid-length participation, χ^2 (3, *N*=409) = 22.94, $p = .000$, *phi* = .24. The effect size was small to medium, which was corroborated by the noticeably longer mean years of enrollment for long-term program participants. A significant, positive relationship was also found between time-to-degree and long-term participation in comparison to short-term participation, χ^2 (3, *N*=585) = 15.09, $p = .002$, *phi* = .16. The effect size in this instance was small to medium, again indicating a meaningful difference in time-to-degree between

Table 28

Crosstabulation: Time-to-Degree by Program Length

			Grad Year				
			4 Years or Less	5 Years	6 Years	More than 6 Years	Total
Program Length	Short-Term	Count	276	211	44	17	548
		% within Program Length	50.4%	38.5%	8.0%	3.1%	100.0%
		% within Grad Year	57.9%	57.5%	52.4%	60.7%	57.3%
		Adjusted Residual	.3	.1	-1.0	.4	
	Mid-Length	Count	191	138	36	6	371
		% within Program Length	51.5%	37.2%	9.7%	1.6%	100.0%
		% within Grad Year	40.0%	37.6%	42.9%	21.4%	38.8%
		Adjusted Residual	.8	-.6	.8	-1.9	
	Long-Term	Count	10	18	4	5	37
		% within Program Length	27.0%	48.6%	10.8%	13.5%	100.0%
		% within Grad Year	2.1%	4.9%	4.8%	17.9%	3.9%
		Adjusted Residual	-2.8	1.3	.4	3.9	
Total		Count	477	367	84	28	956
		% within Program Length	49.9%	38.4%	8.8%	2.9%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%

these groups. No difference was observed in time-to-degree between short-term and mid-length program participants, χ^2 (3, *N*=919) = 2.82, $p > .40$.

Time-to-degree by classification at participation. Little difference existed in time-to-degree between groups when compared by classification at the time of program participation. Average enrollment was 4.11 years for graduates who went abroad as freshmen or sophomores, 4.01 for juniors and 4.15 for seniors. While the mode was consistent for all groups at 3.66 years, the median differed slightly at 3.66 for juniors, 3.83 for underclassmen and 4.00 for seniors. Juniors had the least variability in time-to-degree (*SD*=.63), followed by seniors (*SD*=.74) and underclassmen (*SD*=.83). Chi-square analysis did not show significant relationships between time-to-degree and the participants' class standing at the time of participation, χ^2 (6, *N*=956) = 9.2, $p > .15$, or in any pairwise comparisons, indicating that the timing of study abroad participation during a student's undergraduate career was unrelated to the length of time taken to graduate.

Summary of Research Question 2 Results

Research question two explored whether or not a relationship exists between time-to-degree and study abroad participation. Analyses revealed that among graduates who entered UT Austin as FTIC students in 2002, study abroad participation was negatively correlated with the length of time students took to graduate. Participation was not a significant positive or negative predictor of time-to-degree among graduates, although the interaction of GPA range and participation was significant, primarily because of differences which occurred in the predicted probability of graduating in four years or less compared to more than four years. Analyses among participants indicated that significant differences in time-to-degree existed based on the type and length of

program in which individuals participated, but that classification at the time of participation did not affect time to degree.

Research Question 3: Alumni Perceptions of Study Abroad

Research questions one and two were entirely quantitative in nature, and provided factual data on differences in degree completion and time-to-degree between study abroad participants and non-participants and among sub-groups of participants. While significant relationships did existed, data alone cannot explain the context at the university which may have contributed to the observed outcomes. Research question three attempted to provide this context by asking a sample of alumni from the 2002 cohort about their interest in study abroad as undergraduates. Interviews were conducted with alumni from each group examined: participants, applicants, and non-applicants.

Research Question 3

How do alumni from the cohort in question perceive the value of study abroad and factors which influence or inhibit study abroad participation at UT Austin?

In total, 83 alumni from the entering FTIC cohort of 2002 were invited to participate in phone interviews for this study, and 16 (19.3%) agreed to be interviewed. Although 277 individuals from this cohort were still enrolled at UT Austin as of fall semester 2010, 85 had not yet graduated with a bachelor's degree and were excluded from consideration given the emphasis of this research on degree completion. The remaining 192 individuals were enrolled in graduate programs or were classified as non-degree seekers. This group was then sorted by status as a study abroad participant (n=39), applicant (n=7), or non-participant (n=146). Invitations to participate in phone interviews were sent to 26 participants, eight of whom (30.8%) agreed to participate. All

seven individuals in the applicant group were invited to participate, and three (42.9%) accepted. Survey participation among non-participants was the most difficult to secure, with five out of 49 individuals agreeing to be interviewed (10.2%). All interviews were recorded with the permission of the interviewee and transcribed by the researcher. Pseudonyms were assigned to individuals to protect their anonymity.

Describing the respondent groups. Table 29 shows the gender, college from which the bachelor's degree was received, and college of graduate enrollment among those interviewed. Women represented 62.5% of those interviewed (*n*=10) compared to 37.5% for men (*n*=6). Women also had a higher response rate as a proportion of those invited to participate (21.7%) compared to men (16.2%). More respondents received bachelor's degrees from Liberal Arts (45%, *n*=9) than from any other college, followed by Business (20%, *n*=4). In contrast, the two largest colleges of enrollment among respondents were Education (23.5%, *n*=4) and Business (17.7%, *n*=3).

As part of each interview, alumni were asked about their undergraduate involvement in enriching educational activities based on the definition established by Kuh and associates (2005) to determine if different levels of involvement existed between participants, applicants, and non-participants. The research of Kuh et al. linked participation in these activities to higher than expected degree completion rates when institutions were compared to their peers, and the inclusion of study abroad among these activities formed part of the foundation for the current research. Responded were asked to indicate whether they had participated in any of the seven identified categories of activity as undergraduates: internships or field experiences; community service or volunteer work; foreign language coursework; study abroad; independent study;

Table 29

Background of Respondents within Groups (Frequency and Percentage)

		Participants (*n*=8)	Applicants (*n*=3)	Non-Participants (*n*=5)
Gender	Female	5 (62.5%)	2 (66.7%)	3 (60%)
	Male	3 (37.5%)	1 (33.3%)	2 (40%)
Bachelors Degree(s)	Business	1 (10%)	1 (25%)	2 (33.33%)
	Communication	1 (10%)	1 (25%)	--
	Engineering	1 (10%)	1 (25%)	--
	Fine Arts	--	--	2 (33.33%)
	Liberal Arts	6 (60%)	1 (25%)	2 (33.33%)
	Natural Sci.	1 (10%)	--	--
Graduate Program(s)	Architecture	1 (11.1%)	--	--
	Business	--	2 (66.7%)	1 (20%)
	Education	3 (33.3%)	--	1 (20%)
	Engineering	1 (11.1%)	--	--
	Fine Arts	--	--	2 (40%)
	Information	--	1 (33.3%)	--
	Law	2 (22.2%)	--	--
	Liberal Arts	1 (11.1%)	--	--
	Nursing	1 (11.1%)	--	--
	Public Affairs	--	--	1 (20%)

Note: Undergraduate and graduate totals include double majors.

co-curricular activities, such as student organizations, sports teams/clubs, fraternity/sorority membership, etc.; or a culminating senior experience, such as a senior project, thesis, seminar or capstone course (Kuh et al., p.12). Table 30 presents the frequency and percentage of respondents within each group who participated in enriching educational activities as undergraduates.

Table 30

Undergraduate Involvement in Enriching Educational Activities among Respondents (Frequency and Percentage within Group)

	Participants (*n*=8)	Applicants (*n*=3)	Non-Participants (*n*=5)
Internship/Field Experience	4 (50%)	3 (100%)	2 (40%)
Community Service/Volunteer Work	8 (100%)	2 (66.7%)	4 (80%)
Foreign Language Coursework	7 (87.5%)	2 (66.7%)	2 (40%)
Study Abroad	8 (100%)	0 (0%)	0 (0%)
Independent Study	1 (12.5%)	0 (0%)	1 (20%)
Co-curricular Activities	8 (100%)	3 (100%)	1 (20%)
Culminating Senior Experience	4 (50%)	2 (66.7%)	2 (40%)

Clear differences between groups emerged in terms of participation in enriching educational activities. On average, study abroad participants were involved in five of the seven categories (*M*=5.00), followed by applicants (*M*=4.33) and non-participants (*M*=2.20). The range of participation levels within each group was surprisingly consistent: study abroad participants engaged in a minimum of four and a maximum of six enriching educational activities; applicants engaged in four or five of the seven

categories; and non-participants engaged in between one and three categories of activity. As with other findings in the current research, participants and applicants demonstrated similarities in terms of their involvement in enriching educational activities. In fact, study abroad participation itself distinguished engagement levels; when study abroad is not considered as a factor, participants on average were involved in four categories of enriching activity while applicants averaged 4.33. In contrast, non-participants demonstrated a markedly lower level of involvement on this measure.

Study abroad participants who agreed to be interviewed represented the full spectrum of study abroad options, as summarized in Table 31. Collectively, they participated in 11 study abroad programs ranging in length from four weeks to one academic year. The proportion of those interviewed in programs of different types and lengths varied from the averages for the participants in the 2002 cohort as a whole, as did the typical classification at participation. Among respondents, affiliated programs were the most common program type (45.5%) whereas faculty-led programs were the most common among participants in the 2002 cohort (45.5%). The majority of those interviewed had participated in short-term or mid-length programs (45.5% each), while short-term programs were the most common among all participants in the cohort (57.3%). Over half of interviewed alumni were juniors when they studied abroad (54.5%); in contrast, the majority of participants overall from the 2002 cohort went abroad as seniors (57.6%). These differences were most likely due to the small sample size among those interviewed. Interviewed alumni had studied abroad in three geographic regions, Asia, Latin America and Western Europe. Western Europe represented the greatest proportion of those interviewed (54.5%).

Table 31

Study Abroad Participation among Respondents (Frequency and Percentage)

		Participants (n=8)
Program Type	Faculty-Led	4 (36.4%)
	Affiliated	5 (45.5%)
	Exchange	2 (18.2%)
Program Length	Short-Term	5 (45.5%)
	Mid-Length	5 (45.5%)
	Long-Term	1 (9.1%)
Classification at participation	Sophomore	1 (9.1%)
	Junior	6 (54.5%)
	Senior	4 (36.4%)
Geographic Region	Asia	2 (18.2%)
	Latin America	3 (27.3%)
	Western Europe	6 (54.5%)

The following sections summarize the responses of interviewed alumni regarding their perceptions of study abroad as undergraduates. All individuals were asked about their interest in study abroad, the reasons for that interest, any encouragement or discouragement they received from others, concerns about participating, and whether they would choose to participate (or participate in the same program(s), for participants) if they had it to do over again. In addition, participants were asked to describe their perception of the value of study abroad and the effect of participation on time-to-degree. Responses were organized by category and are reported below in three sections: interest in study abroad and the decision-making process; benefits of participation and

satisfaction with their participation decision; and the effect of participation on time-to-degree.

Interest in study abroad and the decision-making process. Of the 16 individuals interviewed, 15 (93.8%) had considered study abroad while pursing their undergraduate degrees at UT Austin. Given the nature of the research, it is likely that the interview topic appealed to individuals who had considered study abroad and caused overrepresentation of these individuals among survey respondents. Near-universal interest in study abroad as undergraduates caused the applicant and non-participant groups to become less distinct classifications than was observed in areas of the quantitative research. In fact, two of the three applicants who responded did not realize that they were recorded as applicants in the study abroad application system. Both records were coded "new applicant," which indicated that they were authorized to apply to study abroad, but had not gone into the system to select a specific program. Of the five non-participants, two had investigated study abroad up to the point when they realized it would conflict with academic or career-related goals. The similarities between the two applicants who did not remember being authorized to apply and the two non-participants who had seriously investigated study abroad pointed out that, while broadly helpful, the "applicant" classification is a construct of the application system at UT Austin, which requires individuals to seek authorization to begin the process. As the interviews revealed, this did not necessarily mean that "non-participants" were less committed to studying abroad, simply that they engaged in the decision-making process without requesting access to the application itself. However, these terms are retained through this section as some differences did emerge.

In categorizing respondent answers to the question, "Why did you want to study abroad?" four categories emerged which were loosely based on Kasravi's "value of study abroad" themes (2009, p.82). Table 32 summarizes the frequency of responses for participants, applicants, and non-participants within the categories of academic enhancement, cultural experience/knowledge, global perspective, and social skills/experiences. Participants offered more reasons on average for their interest in studying abroad (M=2.5) compared to applicants (M=2.33) and non-participants (M=2.0), which is not surprising given that they were the only individuals in this group to translate intention into action and spent significantly more time in the decision-making process than did others. Differences also emerged between the three groups in terms of the reasons which influenced them to consider studying abroad. The majority of those interviewed (80%) cited at least one reason within the category of social experience/knowledge, which also had the highest proportion of all responses (53.5%). This category yielded the highest response count within both the participant (54.2%) and applicant (66.7%) groups, and was the only category to yield more than one response for applicants. Reasons related to academic enhancement were cited almost exclusively by participants, and this was the second highest response total (35%) within the participant group. In contrast, the majority of reasons cited by non-participants fell within the cultural experience/knowledge category (50%) with social skills/experience second (25%). The most frequently cited reason for interest in study abroad was the experience or recommendation of others (eight responses, or 57.1% of respondents), followed by the chance to learn or practice another language (6 responses, 42.9% of respondents).

Table 32

Reasons Respondents Considered Study Abroad by Category and Response Count

Category	Number Responding	Response Count by Group		
		Participant	*Applicant*	*Non-Participant*
Social Skills/Experience	12			
Interested due to the experience or recommendation of others (word of mouth)		4	2	2
Go somewhere new or get away		3	1	1
Travel		3	1	1
Desire for adventure/to have fun		2	1	--
Get to know others with the same academic interest		1	--	--
Academic Enhancement	8			
Chance to learn/practice another language		4	1	1
Study abroad required or strongly encouraged for major		2	--	--
Interest in courses taught abroad		1	--	--
Cultural Experience/Knowledge	7			
Experience life abroad		2	--	2
Learn about another country/culture		1	--	1
Be immersed in another culture		--	--	1
Make friends from another culture		--	1	--
Global Perspective	3			
Gain global perspective on major		1	--	1
Importance of developing a global perspective		--	1	--

In reflecting on their motivations to go abroad, several participants and applicants described the general desire for the experience of living abroad, sometimes from a desire to do something new or leave the familiar. Jill, who spent a year in Denmark, voiced the most common reasons participants cited for wanting to study abroad:

> I wanted to get out of Texas for a year, for one thing. I wanted to go to a different country and have the chance to travel and maybe learn another language and learn how people in a different country learn and interact.

Seth, an applicant who investigated his options too late in his undergraduate career, believed in the importance of having a global perspective because of his own childhood living overseas.

> Up until I was in middle school I lived abroad, that's not an experience that a lot of people get and I found it to be enormously helpful in the rest of my life…. It opened my eyes up to the world at an incredibly young age.

In contrast, Estelle, a non-participant who was also raised abroad, placed more emphasis on the academic enhancement offered by participation: "Even with my background growing up in China, I still felt like, perhaps going to a country different than China and… taking some business courses would give me a good perspective on how international business decisions are made."

Multiple individuals mentioned that the positive experiences they saw others have through study abroad, and sometimes direct advice to participate, contributed to their initial interest in participation. Richard, a participant in two short-term programs, was strongly influenced by older friends who had studied abroad:

> I heard from a couple of my friends who had studied abroad who were older than me and said that if you had to do anything in your time at UT or just in your time as an undergraduate, it was to study abroad. And so I made sure that I got that experience in.

The positive experience of others convinced Kate, a short-term program participant, that study abroad was an integral part of the undergraduate experience; "…you hear about people doing it, and having the best time of their life, and you know it's something you do when you're in college." Similarly, Kevin, a non-participant, explained that "a lot of friends older than me had done it and it came highly recommended as an experience to do while you were in college."

The influence of others on individuals' interest in study abroad occurred in more specific ways as well. Table 33 reports responses to the questions "Did anyone encourage you to study abroad?" and "Did anyone discourage you from studying abroad?" Responses to these questions indicated that most individuals (60%) had been encouraged to participate and only one individual (6.7%) had been discouraged from participating by someone else. More than half of participants and non-participants had received encouragement from at least one individual, whereas only one of three applicants indicated that they had been encouraged to participate. On average, participants received encouragement from 2.13 sources, compared to 2.0 sources for non-participants and 1.0 source for applicants. Both applicants who felt they had not been encouraged also believed that this happened because they realized they could not study abroad before they started talking about their interest with others, so others had not had the chance to encourage or discourage them.

The most common encouragement across groups and for participants specifically came from family (53.3% and 62.5% respectively). Caroline, a study abroad participant, recalled receiving "lots of encouragement" from her family in addition to encouragement from individuals on campus. Amber, another participant, also received strong

Table 33

Encouragement to Study Abroad by Response Count

	Participant	Applicant	Non-Participant
Did anyone encourage you to study abroad?			
Yes	5	1	3
No	3	2	1
Encouraged by:			
Family	5	1	2
Friends	4	1	2
Environment (college, major, university)	3	--	2
Faculty	2	--	2
Academic Advisor	1	--	1
Employer	--	1	--
Significant Other	1	--	--
Did anyone discourage you from studying abroad?			
Yes	1	0	0
No	7	3	4
Discouraged by:			
Self	--	1	2
Family	1	--	1

encouragement from her parents because, "[t]hey saw…that my sister missed that opportunity, and so my parents were really supportive of it." Friends were the second most common group to offer encouragement overall (46.7%) and for participants (50%).

As Richard's and Kevin's quotes demonstrated, friends were the most likely to encourage others to seek out study abroad prior to the individual having expressed interest.

The third and fourth most common sources of encouragement were related to each other: one-third of those interviewed indicated that the major, college or university environment encouraged study abroad, while one quarter received encouragement from individual faculty. Collectively, nearly half of respondents (46.7%) cited one of these elements of the academic environment as a source of encouragement to study abroad. Richard described the strong influence of a particular faculty member on his desire to participate:

> Just being in that [faculty member's] classroom revolutionized the way I looked at the world, if that makes sense. She had all these activities that showed us how biased we were in our thinking. It was just so interesting. She would have these…questions…and then you would kind of respond just the way that you *would* respond, and she would twist it and put it in a completely different perspective. I remember that class distinctly because I would say that class has really changed my perception of being, like, a global scholar, and that actually motivated me to study abroad as well. She really motivated me a lot and really encouraged me.

Estelle and Kevin, both non-participants who majored in business, felt the environment and faculty in the business school encouraged study abroad and this influenced them to investigate their options, even though they were ultimately unable to participate. Although Jay did not consider studying abroad as an undergraduate, he too felt that his college was supportive of participation.

At the same time that a number of individuals, like Caroline and Richard, were strongly encouraged to participate, a sizeable proportion of respondents felt that they had not received direct encouragement, even if they perceived the general environment to be supportive of study abroad. Laila was the only applicant who indicated she had received

direct support for her interest in studying abroad, in her case from her parents. Kate, a Bio-Chemistry major who decided to studied abroad to explore a second major in Spanish, embodied the experience of multiple individuals in terms of the source and strength of encouragement: "I think once I had said I wanted to, my parents supported it, but, I mean, other than that, not especially. Nobody discouraged me, but nobody said 'that's awesome'." Multiple individuals reframed this question during the interview to indicate that family members were "supportive" of their interest in study abroad, versus being actively encouraging. The experience of the respondents points to the importance of self-motivation in the decision-making process, and two of the individuals who did not study abroad alluded to this in describing themselves as their own source of discouragement from participating. Shannon, a non-participant who had concerns about meeting the eligibility criteria and speaking a second language, explained, "I just went to one information session, there were future ones that I could have attended, but I sort of discouraged myself from continuing on that path."

Like Shannon, all respondents followed a "path" or decision-making process as they evaluated whether or not to participate. Initial reasons to participate where validated or invalidated by the opinions of others, and evaluated against each individual's concerns about participating. Concerns translated into challenges to overcome for participants and equated to barriers to participation for the other groups. Five categories of concerns about study abroad participation emerged from the interviews: academic concerns, financial concerns, cultural adjustment concerns, programmatic/process concerns, and career-related concerns. Table 34 describes the types of concerns raised by participants, applicants, and non-participants by category and response count.

Table 34

Concerns about Study Abroad Participation by Response Count

Category	Number Responding	Response Count by Group		
		Participant	*Applicant*	*Non-Participant*
Academic Concerns	8			
Delayed graduation		3	3	1
Compatibility with major requirements (timing & major-applicable credit)		1	2	1
Securing course substitution approvals		2	--	--
Financial Concerns	8			
Cost of participation		4	--	4
Lost wages		--	--	1
Not aware of financial aid applicability		--	--	1
Cultural Adjustment Concerns	6			
Language (skill level or as a social barrier)		4	1	1
Nervous about being away/being abroad		4	--	--
Loneliness		2	--	--
Housing/living concerns		2	--	--
Programmatic/Process Concerns	7			
Complexity of the pre-departure process		3	--	--
Not enough program options (timing/course offerings)		--	1	2
Meeting eligibility criteria		--	--	1
Career-Related Concerns	2			
Necessity to be available for employment interviews		--	1	1

Participants, applicants, and non-participants all raised academic issues as an important part of the decision-making process, and in several cases, the reason individuals did not participate. Seven individuals (46.7%) were concerned about the ability to graduate on time or complete major-specific courses in the proper sequence. All three applicants determined that study abroad was not compatible with their planned sequence of courses and would delay graduation. For two, this was the central reason they did not participate. Seth decided against study abroad because,

> It's really hard in the Engineering program, there's just so much going on, and, especially with study abroad, it's not like…liberal arts or business where you can go abroad and it's still the same basic classes. Engineering programs are so specific that it...by the time I really looked into it seriously, it was too late.

Laila, also an applicant, withdrew after being accepted into a program when she realized that participation would prevent her from taking a course she needed in order to graduate on time. For half of the participants (50%), ensuring that study abroad credit would fill degree requirements was a significant concern as they applied and prepared to participate. Richard explained that study abroad had to fit his academic requirements, "because I wanted to make sure that I was following my degree plan and I wasn't taking a class that wouldn't count towards my degree, because I wasn't in a position to do that at the time."

Financial concerns were raised by 50% of respondents, including 50% of participants and 100% of the non-participants. The cost of study abroad was Richard's primary concern, and one he believed all students shared. "I would just say for everyone, I think the main concern is just the money aspect, because funding is definitely a big issue especially if you're going abroad, it is expensive. So that was my main concern." Michelle, a short-term program participant, wanted to be sure she didn't overburden her parents. "I was already an out-of-state student, and so tuition, on top of study abroad

fees… I didn't want to kill my parents." The out-of-state tuition differential in part guided her toward an affiliated program, which did not incur a tuition charge. All five non-participants expressed concern about the cost of participation, and for Estelle, the opportunity cost was the primary reason she decided not to study abroad. "The cost of the study abroad program…was kind of steep, because I would have lost a whole summer's wage…the financial calculation was definitely a big factor in my decision not to pursue it." Shannon had concerns about financial aid applicability to study abroad. "I thought that the financial obstacles might be something that I couldn't overcome. I was sort of confused about how I could even go about getting the money to do it [study abroad] through the school."

While cultural adjustment concerns had the highest response count of any category, this was almost entirely due to multiple concerns raised by individuals who participated. The frequency of concerns raised by participants makes sense given that only one individual who did not participate reached the program acceptance stage, the point at which students often experience nervousness about the upcoming period abroad. As Richard put it, "everyone, including myself, has a kind of basic anxiety mixed with excitement about going abroad just because you don't really know what to expect." The only item in this category mentioned by individuals in all three groups was concern about the ability to communicate in a foreign language. For Shannon, a non-participant, this was her greatest concern about study abroad, even though it was also her reason for being interested. Among participants who raised this concern, apprehension about communicating daily in another language was offset by the desire to gain fluency in another language.

Two additional categories of concern were raised by alumni, programmatic/process concerns and career concerns. Three individuals attributed their inability to go abroad to the lack of appropriate program options, either because of academic fit or timing. Seth found it difficult to fit study abroad into the very specific degree requirement for Engineering, while Jay did not consider study abroad because the options advertised were not relevant to his major in music. Kevin found there were few options in business which allowed fall semester participation, which led to a career-related concern:

> I was going after investment banking positions and the summer internship recruiting season is the spring of junior year. Those internships typically result in full-time hires, and that was the same semester that students typically go abroad. So that was the only factor for me, was the decision to participate in on-campus recruiting.

Like Kevin, Courtney did not pursue study abroad because it conflicted with the employer recruitment cycle, in her case, for permanent employment opportunities. While three participants described process-related challenges due to the complexity of pre-departure requirements, none indicated that this was a serious concern that caused them to consider withdrawing from participation.

In determining whether or not to study abroad as an undergraduate, Estelle described the process as a "cost-benefit analysis," and this evaluative process was apparent through multiple interviews with alumni who did not study abroad. Because of her prior experience living abroad, Estelle did not see study abroad as "essential," and Nicole, who had traveled abroad multiple times with her family, felt it was "not a necessity." In fact, of the eight individuals who did not study abroad, four (50%) had traveled or lived abroad already, and this factored into their decision-making process.

This prior experience both generated their interest in study abroad, but also led them to feel that study abroad was not a once-in-a-lifetime opportunity, as other alumni felt. Similarly, three of the eight who did not study abroad weighed their own ability to travel abroad independently in the decision-making process. Kevin, who chose to remain on campus in order to be available for internship recruitment, decided that he would travel after graduation instead and spent two months in Europe with a friend. Estelle also felt that as an undergraduate, she lacked "clarity of purpose" and so was unable to see how study abroad was a worthwhile investment of resources. Interestingly, Estelle, Kevin, and Seth all studied abroad as part of their graduate programs at UT Austin.

Benefits of participation and satisfaction with participation decision. Alumni who had participated in study abroad were asked, "Looking back, how did studying abroad benefit you?" The enthusiasm with which they responded to this question made clear the lasting impact they attributed to the experience. Responses fell into five categories, again loosely based on Kasravi's (2009) "value of study abroad" themes: social skills/experience, cultural experience/knowledge, personal growth, global perspective, and practical skills/professional advantage. Between 62.5% and 87.5% of participants cited benefits in each category, with the most participants referencing benefits in the social skills/experience category. Table 35 summarizes the benefits of study abroad described by participants by category and response count.

Within the social skills/experience category, 50% of participants believed that the overall experience of study abroad was itself a benefit to them, and they sometimes struggled to find the words to explain this. Kate, who participated in a summer program in Spain, said, "Living in another country, living with a host family, I don't know, they

Table 35

Benefits of Study Abroad by Category and Response Count

Category	Number Responding	Response Count
Social Skills/Experience	7	
Meet new people/make friends		4
The positive experience of living abroad		4
Travel		2
Happier person after studying abroad		1
Cultural Experience/Knowledge	6	
Made friends from other cultures		2
The experience of cultural immersion		2
Ability to adapt to other cultures		1
Greater understanding of another culture		1
Global Perspective	5	
See the world differently/broader perspective		4
Greater understanding of own culture		2
Gain global perspective on major		1
Personal Growth	5	
Better understanding of personal values/beliefs		2
More adaptable		2
More independent		2
More confident in new situations		1
Personal development		1
Practical Skills/Professional Advantage	5	
Ability to speak a second language		3
Employer value of study abroad experience		2
Résumé builder		2
Ability to work in multicultural settings/teams		1
Cross-cultural communication skills		1
New perspective on second language acquisition		1

were just all rich experiences, very unique, it was just a once in a lifetime sort of experience for me." John described the tangible benefit of language acquisition, paused, and then stated, "You know, it's just a sort of ethereal kind of coolness about living and studying in another place. It's just that simple." This overarching sense of having experienced something transformative was apparent in almost all interviews, and initial general statements often led to anecdotes to describe the various ways in which study abroad changed participants' view of the world, view of themselves, or contributed to their personal or professional development. Half talked about the friends they had made while abroad, and were still in touch with both friends and homestay hosts. Although travel was a recurring theme in individuals' motivation to study abroad, only two participants mentioned travel as a benefit of study abroad, and in one case, the reference was to the ability to travel and stay with friends made during the study abroad program.

Six participants (75%) described benefits related to cultural experiences or knowledge gained abroad, the second highest number of respondents within a given category. However, responses showed little commonality as most respondents emphasized different aspects of this category. For example, Richard described how the contrast of conducting research on Chinese governmental policies from the U.S. and then from within China, where his class encountered censorship, led to a better understanding of the effect of governmental policy on Chinese society. Jill believed her year abroad in Denmark improved her ability to adapt to other cultures, a benefit which also enhanced her appeal to prospective employers. Both Zach and Caroline mentioned international friends they made while abroad who gave them greater insight into others' cultures.

Examples of gains in cultural knowledge/experience were often closely connected to the participant's development of a more global perspective. Five participants (62.5%) perceived some benefit of study abroad related to this category. Fully half of all participants believed that study abroad had helped them see the world differently or gain a broader perspective on the world. Michelle attributed a more global perspective to the experience of realizing that her expectations about Vietnam, where she spent a summer abroad, were inaccurate.

> I had no idea to tell the truth what Vietnam was going to be like. I think, like, I had all the books and the pictures and I had what I thought it was going to be like, but when I got there, it wasn't anything like what I'd visually pictured in my mind. And, I mean, I wasn't disappointed at all, but I remember just being really shocked by that, and then coming back and thinking, based on all the pictures I've ever seen of anything else, what else do I have wrong, you know?

Zach discussed the European friends he made and how continued contact with them made him "feel like my perspective has been broadened and my worries often aren't as petty....when I talk to my friends abroad, it puts jobs and economy into perspective." Richard believed his experience abroad gave him a new perspective on the international aspects of his major, Government; "I wouldn't have been able to make that connection [between policy and society] if I had just studied about US-China relations from an American standpoint."

Five participants (62.5%) also described the personal growth they experienced as a result of study abroad. There was little consensus in terms of the specific benefits cited, which is perhaps fitting given the individualized nature of this category. Amber and Kate both credited study abroad with the development of greater independence and adaptability in new situations. Amber explained,

> Before [I studied abroad]…I had never been to Europe and I had never been that far away from home on my own. So I think it helped me to become more independent, more comfortable in new situations, because I went there basically knowing no one.... Just the prospect of going somewhere where I didn't know anybody, I wasn't a native speaker of the language, and having to make new friends and live there and be a part of that culture was pretty scary. But it definitely made me more open to those kinds of experiences moving forward.

Caroline and Zach both felt that study abroad participation gave them a new perspective on their own beliefs and values. Caroline described study abroad as an experience that "gives you a good idea of what you value and what you like about your culture."

Five of the participants also credited study abroad with the development of practical skills or having a professional advantage compared to non-participants; this category had the second highest total response count among the five categories. Three participants improved their ability to speak a second language, and Caroline was using her language proficiency to conduct interviews for her graduate research. Kate, who returned to graduate school for a degree in Nursing, believed study abroad was a competitive employment advantage in conjunction with her undergraduate degree in Spanish; "I work at a children's hospital here now and there's a lot of Spanish speaking families, so I think it definitely strengthens my résumé." Jill felt it had helped her secure engineering positions after graduating:

> [Study abroad has] really helped me with any job search I've done…. Dealing with international people, and different kinds of people, it shows that you can work in group environments and work in different engineering teams. Most companies are not just US-based, they have Asian or South American factories and things like that, or counterparts, so it's good to show you can deal with other types of people than just yourself.

Michelle also perceived professional benefits to study abroad, although she did not anticipate them as an undergraduate. As an undergraduate, Michelle studied Geography,

then returned to UT Austin to pursue a degree in Education. In reflecting back on the benefits of study abroad, Michelle said,

> I think it really helped me with my perspective on language acquisition. And like, right now, I'm a teacher, and I teach all these ESL kids, and while none of them speak Vietnamese…. You know, I was already a Spanish minor,…I'd been taking Spanish since I was a freshman in high school, and starting over fresh again, I don't know, it really...helped my perspective.

Michelle felt her experience had also assisted her in the hiring process for her current teaching position. Her principal highly valued international experience, and Michelle described her as going "ape whenever she finds someone who's studied abroad or lived abroad [because]…they can relate to multicultural kids."

Interviews with alumni participants clearly indicated the many benefits they attributed to study abroad. However, these interviews also presented a unique opportunity to investigate the extent to which alumni in all categories were satisfied with their choice to study abroad or not as undergraduates. All interviewees were asked, "If you had it to do over again, would you participate in a study abroad program? Why or why not?" Almost all individuals (87.5%, *n*=14) indicated that they would study abroad if they had it to do over again. Participants all agreed with their decision to study abroad, although several suggested different choices they would have made. Richard spent a year in Taiwan as a Fulbright scholar following graduation, and after that immersion experience, he wished he had planned in a longer program abroad as an undergraduate.

> I wouldn't take the experiences that I had away, because both of them were such valuable experiences to make me the person that I am today. But I think that if I could redo it, I would spend a semester abroad, as opposed to just a month. Because I honestly just don't feel like you get the full experience being there for a month….. [Y]ou really don't pick up on things [in a month] -- it's kind of like, just when you're kind of settling in, you're already coming back home. So I think if I could redo [it], I think I would extend my stay.

John also wished he could change the program in which he participated, because he found there were too many Americans in his first program and it interfered with his ability to learn Spanish. In contrast, Jill loved her year in Denmark, but wished she had disenrolled from the university to save the cost of tuition.

Applicants were also unanimous in their agreement that they would study abroad as undergraduates if they had the chance to do it over. Both Seth and Courtney would have started planning as freshman in order to avoid the scheduling conflicts which prevented their participation. Laila simply wished she'd made a different choice. "One of the things I regret the most about college is that I wish I had had more time to study abroad. After you leave, you don't get that time in your life back."

Non-participants were divided on whether they would make a different decision if given the option: three wished they had studied abroad while two would not have participated even if they could go back and make another choice. Shannon, a non-participant who wished she could do it over again, learned by the example of others that some of her concerns as an undergraduate were unfounded.

> …a lot of people I went to school with ended up doing it, also family members did it through their respective universities. And, you know, it turns out, as bad as I am at language, they were worse, but it was still just something that they did. And they found a way to make it work financially.

Jay, who did not consider studying abroad as an undergraduate because it did not seem relevant to his degree, wished he "had been more proactive in finding opportunities that would have been very relevant…. It's one of those things where you wish you had done it now that you know what you know." For Kevin and Estelle, circumstances dictated their decision. As Estelle explained:

> If I had the same kind of constraint, like, you know, financially and just other things as well, then I don't see how I would have made a different choice. I definitely think it's a worthwhile activity and experience, but I think given my particular kind of background, it just didn't for some reason make sense to me to do it while I was undergrad. Whereas I felt like now I'm a lot more focused career-wise and I'm more clear as to what I want to get out of something like that, so as a graduate student, I made a different choice.

Like Estelle, Kevin felt that he could not have made a different choice as an undergraduate. However, at the time of the interview, he was enrolled to go abroad to South Africa as part of his MBA program. In the end, of the 16 alumni interviewed 68.8% studied abroad in total, three as graduate students.

The effect of participation on time-to-degree. In keeping with the focus of this research, alumni who had participated in study abroad were asked about the length of time it took them to graduate and whether or not participation extended their time-to-degree. On average, respondents who studied abroad took four years to graduate (M=4.0), less than the university-wide average of 4.15 years for individuals in this cohort and for participants overall (M=4.11).

Explanations of the impact of study abroad participation on time-to-degree revealed the importance of graduating on time to most participants, and the careful planning process to ensure this occurred. Richard's initial criterion for program selection was ensuring that courses fit with his plans to graduate in four years, and this caused him to consider only short-term, faculty-led programs offering courses which directly applied to his major. John, who participated in two programs, planned carefully to ensure on-time graduation. "No, it didn't [delay graduation], that was one of the reasons I was still able to go [on both programs] is because I could squeeze it all in."

Several individuals mentioned that they came to UT Austin with advanced placement (AP) credit, which gave them more flexibility when considering if they would graduate on time. When asked if study abroad delayed graduation, Amber responded,

> No, it didn't actually. I had planned to graduate in three years, and then I ended up doing three and a half because I took extra classes at home, in Austin. If I had decided not to, then I could have graduated in three years…. I could have graduated really early with whatever required classes I had because I had so much credit from advanced placement classes. But I don't think if I hadn't studied abroad I would have graduated sooner, because I didn't want to leave in two and a half years.

Caroline also came in with AP credit, but thought she could have studied abroad and graduated in four years even without it. John thought "on-time" graduation was a matter of perspective; "I came in with about two years of credit…and I graduated in three years, so depending on how you look at it, I either took an extra year or I finished a year early."

Of the eight participants interviewed, only two specifically identified that study abroad participation delayed their graduation. Both participants were abroad for a full academic year, although in one case this occurred through participation in two semester-length programs, and both graduated one semester later than intended. Delayed graduation for these two individuals was consistent with the previously described quantitative analysis on time-to-degree by program length, which indicated that year-long program participants took longer to graduate than did short-term and mid-length program participants. In both cases, the individuals knew that the extended time abroad would cause a delay and accepted this consequence when making the decision to study abroad for a full year.

Summary of Question 3 Results

Research question three asked, "How do alumni from the cohort in question perceive the value of study abroad and factors which influence or inhibit study abroad participation at UT Austin?" The inclusion of a qualitative phase in this research was intended to illuminate findings from questions one and two, and provide insight into why high interest levels in study abroad participation do not translate into more participants abroad. Interviews with participants, applicants, and non-participants indicated that participants had more reasons for their interest in participation than the other groups and received more encouragement to study abroad. While individuals in all three groups cited concerns about academic progress when considering study abroad, participants were able to integrate participation into their degree plan with little or no delay in graduation. Applicants and non-participants were most likely to have decided against study abroad because of concerns over degree progress, the cost of participation, or conflicts with employment recruitment. The majority of respondents would participate as undergraduates if they had the chance to do it again, and individuals who had participated as undergraduates cited numerous benefits as a result of having studied abroad.

Chapter 5

Discussion and Recommendations

A bachelor's degree opens the door to career opportunities and positively impacts the quality of recipients' lives. While enrollments in higher education have increased steadily since the 1970s, degree completion rates have not risen in tandem, and more students are taking longer to graduate than 40 years ago (Turner, 2004). Research on retention has increasingly emphasized the need to engage students to keep them enrolled to degree completion. Engagement occurs through in- and out-of-class interactions between faculty and students and through social interactions between peers. Kuh et al. (2005) noted that universities with students who exhibited high levels of engagement also demonstrated higher than expected levels of degree completion when compared to peer institutions. These researchers described the many, varied ways in which student engagement occurs on campuses in an effort to share these best practices with others.

The current research was undertaken in an effort to better understand the relationship between degree completion and one of the engaging activities identified by Kuh and associates: study abroad. At the same time, this research also seeks to strengthen the connection between study abroad and the core mission of universities to both educate and graduate students. One would hope that activities within the university which contribute to both goals would be valued more highly than those which do not. While study abroad is viewed positively on most college campuses, it is too often perceived as an optional activity at the margins of student experience. Such a perception can only be influenced through additional quantitative data on the relationship between study abroad participation and concrete outcomes valued by institutions and society. In

the last 10 years, multiple studies have attempted to document these kinds of concrete outcomes of study abroad by investigating differences between participants and non-participants in terms of academic performance, degree completion, or earnings after graduation.

This research focused on assessing what impact, if any, study abroad participation had on undergraduate degree completion at The University of Texas at Austin. The population for the study was the first-time-in-college (FTIC) entering cohort of 2002 (*n*=7845). Graduation rates were compared for three groups, study abroad participants (participants), students who applied to study abroad, but did not participate (applicants), and students who neither applied to nor participated in a study abroad program (non-participants). Applicants were included in response to the commonly raised argument that students who study abroad are already different – more academically prepared, more organized, more motivated than those who do not study abroad – and would naturally have different outcomes than other students, whether they studied abroad or not. Because students associate participation with delayed graduation, analyses were also included to examine time-to-degree in an effort to allay this concern. In addition, both degree completion and time-to-degree were examined within sub-groups of participants to determine if differences existed based on program type, program length, or classification at the time of participation. These particular comparisons were included to more fully understand what differences might exist as a result of specific choices student make when studying abroad. And finally, interviews with alumni from the 2002 FTIC cohort were undertaken to explore the perceptions, influences, and barriers which supported or prevented study abroad participation for these individuals.

Multiple, significant results were found throughout these analyses. In keeping with the work of Kuh et al. (2005) and the findings of other researchers (Posey, 2003; Young, 2008), study abroad participants did graduate at higher rates than other students, and these differences were not attributable to differences in academic performance between participants and others. The remainder of this chapter summarizes the similarities and differences between the participant, applicant, and non-participant groups; describes key findings from this research and discusses relevant literature, suggests implications of these findings, and recommends areas for further research.

Discussion of the Population

Initial descriptive statistics were run to evaluate the similarity of participant, applicant, and non-participant groups as well as any differences which might exist. Given that large discrepancy between the number of new students who plan to study abroad each year compared to the number of graduates who do, these comparisons were undertaken to see if clear differences existed between the groups that could help to explain this discrepancy in participation rates. In addition, the participant group was examined to see what patterns existed in terms of program type or length preferences by gender or race/ethnicity. The following sections discuss similarities and differences between the three groups and patterns of participation among those who studied abroad.

Characteristics of the Three Groups

Participant, applicant, and non-participant groups were distinct from each other in some areas and more similar in others. The greatest differences were often between the participant and non-participant groups, with applicants similar to participants in most areas described below and similar to non-participants as well in some respects. In terms

of their areas of study, participants and applicants demonstrated different patterns of college enrollment than did non-participants, as described in Table 4. The largest proportions of participants and applicants graduated from Liberal Arts, Business, and Communication, and all three were overrepresented in comparison to their proportion of graduates at the university. In contrast, Natural Sciences and Engineering were significantly underrepresented among participants and applicants; the fact that each had a larger proportion of applicants than of participants suggests that students from these disciplines experienced more challenges with respect to participation than students in other colleges. Data were also provided in Table 3 on the proportion of participants, applicants, and non-participants based on the college of admission to the university. These data are interesting in their own right, as they illustrate the significant number of students who change majors after admission, particularly into Liberal Arts, which graduated nearly 500 more students from this cohort than it admitted.

Consistent with national trends in study abroad participation, women were disproportionally represented among both participant and applicant groups while men were overrepresented among non-participants. The proportion of men who applied to study abroad was slightly higher than the proportion who participated, which implies a greater barrier for male student participation than for female participation. The racial and ethnic makeup of the three groups was more consistent than the gender composition of the groups, although Asian American and White students were overrepresented among participants and African American and Hispanic students were underrepresented. It is concerning to note that Hispanic students were overrepresented among applicants in contrast to their proportion in the total cohort, yet they were still underrepresented among

participants. This indicates that the desire to study abroad is high within this group, but they are more likely than other groups to encounter factors which cause them not to participate.

All three groups were also compared on academic performance measures because of the common assumption that participants are higher achieving students than non-participants. This was in fact the case when average SAT composite score and average GPA at the point when students attained sophomore standing were compared between participants and non-participants, but applicants did not fit neatly into either group. The average SAT composite score of the applicant group fell between the averages for the other two groups, and the observed differences were not statistically significant. This means that applicants were similar to both groups in terms of their standardized test scores. In contrast, applicants did have a significantly different, higher GPA at sophomore standing than did non-participants while they showed no significant difference from participants. The similarity of applicants to participants on measures of academic performance supports the assumption of this research that applicants are similar to participants, and that their inclusion as a distinct group can help to isolate differences in outcomes which relate to study abroad participation versus outcomes which result of inherent differences between the participant and non-participant groups.

Characteristics of Study Abroad Participants

Study abroad participants demonstrated distinct preferences when examined by program length and type. Faculty-led programs and short-term programs were the most common in terms of program type and length. Faculty-led programs at UT Austin are almost entirely short-term, and it seems likely that the growth of these programs over the

last 10 years has directly affected the proportion of short-term participants. The proportion of participants by program length closely paralleled national trends; national data do not include program type, so it is not clear if the pattern at this institution is typical nationally.

In comparing the enrollment patterns of participants by demographic variables, similarities and differences were also observed based on participant gender, race/ethnicity, and classification at the time of participation. Male and female participants showed no statistically significant differences in the type or length of program in which they enrolled. Given the significant difference in participation levels between the genders, this could mean that the barriers which affect male participation are separate from the nature of the programs themselves. Enrollment patterns were different based on students' race or ethnicity, most notably with respect to Asian American students' preference for exchange and mid-length programs, African American students' preference for faculty-led and short-term programs, and Foreign students' preference for mid-length programs. In each case, the preferred program type is typically associated with the preferred program length, but not the reverse, which indicates that program type is probably the more important of the two factors. It is also possible that these enrollment patterns reflect offerings unique to each program type which are particularly appealing to individuals in these groups. It was also unexpected to discover that no African American, Native American, or Foreign participants took part in long-term programs. Preferences for program type and length are areas worth investigating further in the future.

When participation was examined by classification, seniors represented over half of all participants and juniors represented a third of the total group; combined, these

groups comprised over 90% of all participants. In contrast, juniors were the largest group abroad nationally followed by seniors, and the two groups represented roughly 57% of all participants. The distinct pattern of enrollment at UT Austin suggests that internal environmental or cultural factors influence when students study abroad. It is possible that students are advised or choose to complete degree requirements first and then determine if they can incorporate study abroad, one of the considerations interviewed alumni mentioned. The preponderance of seniors could also result from the prevalence of fifth and sixth year seniors on campus. This is another area for further investigation in the future.

Summary of Findings and Discussion

Although the quantitative research questions and results were organized by educational outcome (degree completion and time-to-degree) and type of analysis, key findings are organized below by educational outcome across analyses in order to discuss all aspects of the findings as they relate to a particular group. The summary of findings and discussion are presented in the following sections: differences in degree completion rates between groups; differences in time-to-degree between groups; differences in degree completion and time-to-degree among participants; and alumni perspectives on study abroad.

Differences in Degree Completion Rates between Groups

Analyses of degree completion compared the actual differences between participants, applicants, and non-participants at four, five, six, and eight years after admission, and subsequently assessed whether participation contributed to the predicted probability of degree completion above and beyond other variables known to predict

graduation. Chi-square analyses indicated that graduation rates were significantly different between the three groups at four, five, six, and eight years after admission. In pairwise comparisons, graduation rates were significantly different in all comparisons between participants and non-participants and between applicants and non-participants. Degree completion rates were significantly different between participants and applicants at five, six, and eight years after admission with no significant difference at four years post-admission. Participants graduated at higher rates than did applicants, and both groups graduated at higher rates than did non-participants. These findings are in contrast to Sutton and Rubin's (2010) findings within the Georgia System which indicated that a significant difference existed in four year graduation rates, but disappeared by six years after admission. The differences in results are most likely the result of differences in the student populations used in each study.

Results of these comparisons between participants, applicants, and non-participants showed that the three groups did experience different degree completion outcomes. The greatest differences existed between participants and non-participants as indicated by differences in effect size for these analyses. While the effect sizes were small for analyses between participants and non-participants, it was interesting to note that they rose continuously through six years post-admission and then plateaued. This suggests that the gap in degree attainment widened over time between participants and non-participants and then stabilized. This could indicate that participants had stronger institutional commitment as described by Tinto (1983) and therefore continued to persist at higher rates than their peers who had not studied abroad. It may also be a reflection of differences between the groups on measures that were not included in this study.

Applicants were included in this study to act as a proxy for motivational and other factors which may distinguish a student who pursues study abroad from those who do not. Inclusion of this group demonstrated that in fact there were differences between participants and non-participants which go beyond academic performance indicators like SAT composite score or GPA. Drawing on the theoretical foundations for this study, it may be that those students who took action on their interest in studying abroad, whether they participated or not, were also students who were more involved or engaged (Astin, 1984; Kuh et al., 2005), and this difference was reflected in their higher degree completion rates. In addition, the differences in graduation rates between participants and applicants beyond the five year enrollment mark could reflect the impact of study abroad in furthering students' engagement. This may also be interpreted as another facet of the continuum of outcomes between the three groups, but the findings on the predicted probability of graduation suggest that observed differences are attributable in part to study abroad participation itself.

Logistic regression was used to determine whether study abroad participation has any effect on the predicted probability of degree completion. Additional variables known to positively or negatively predict graduation and/or time-to-degree were included to assess what study abroad participation may contribute to these analyses above and beyond those variables. Additional variables included in the model were gender, ethnicity (African American, Asian American, Hispanic, and White), GPA at sophomore standing, and SAT composite score. Study abroad participation was a significant, positive predictor of degree completion in analyses of five, six, and eight year graduation rates when all other variables were held constant. The interaction of GPA and

participation was significant for degree completion in four or five years, while the interaction of SAT composite score range and participation was only significant in the analysis of four year degree completion. Both interactions indicated that the effect of participation on the likelihood of degree completion in a given timeframe changed as GPA or SAT changed. The interaction of gender and participation was not significant in any analysis, which confirms that the effect of participation itself on predicted probability of graduation does not change based on the individual's gender.

These analyses confirmed that study abroad participation increased the likelihood that participants would graduate separate from the effect of other variables which may also have impacted the predicted probability of degree completion. This finding is consistent with Kuh et al.'s (2005) observations that institutions with higher levels of student participation in enriching educational activities, such as study abroad, also experienced higher than expected degree completion rates when compared to peer institutions. Sutton and Rubin (2010) also found that study abroad participation increased the predicted probability of graduation from a doctoral institution. In their research, participation increased the likelihood of graduation in four years by 16.1%; although participation was not a significant predictor of graduation in four years at UT Austin, the odds ratio was almost identical at 14.3%. Parallel analyses comparing the predicted probability of degree completion between applicants and non-participants yielded no significant differences for any time frame analyzed here. The fact that applicants were not more likely to graduate than non-participants, yet they were like participants in terms of academic indicators of success (GPA and SAT composite score),

further supports the idea that the act of studying abroad contributes to degree completion above and beyond differences in academic preparation or motivation.

Multiple additional variables in the model were also significant positive and negative predictors of degree completion at UT Austin. Consistent with previous research (Astin, 1971; Cabrera, Burkum, & LaNasa, 2005; Pascarella & Terenzini, 2005), academic performance in college was a positive predictor of degree completion in all analyses. However, in contrast to other findings, SAT composite score was a negative predictor of graduation in almost all analyses. At five, six, and eight years after admission, each 100-point increase in SAT score corresponded to a decreased predicted probability of graduation which ranged from 7.1% to 9.6%. While academic performance in college has been shown to be a better predictor of degree completion than SAT composite score, it has not been shown to negatively predict the likelihood of graduation. It is unclear what conclusions to draw from this finding. The most likely explanation is that attrition occurred among high performers on the SAT, most likely as a result of transferring out of the institution versus dropping out of higher education. The inverse relationship between degree completion and SAT scores may also be a reflection of the size of student retention programs on campus, which support at-risk students, relative to the proportion of high-achieving students engaged in honors-type programs. This is an area for further investigation specific to this university.

Like results found elsewhere (Astin et al., 1996; Bound et al., 2009; Knapp, Kelly-Reid, & Ginder, 2010; Peter & Horn, 2005; Turner, 2004), gender was a positive predictor of the probability of degree completion. Female students were more likely to graduate than male students in all analyses, with the greatest disparity in four-year

graduation rates, where being female increased the probability of graduation by almost 70%. This gap narrowed to 38% at five years post-admission and then remained at around 30% in six and eight year analyses of degree completion. Clearly the national trend toward higher matriculation and degree completion among women holds true at UT Austin, and this achievement gap emphasizes the importance of involving male students in activities which contribute to retention and graduation, such as study abroad participation.

Race/ethnicity was a predictor of degree completion as well, although the findings in this study were not consistent with previous research. In all analyses, White and Asian American students showed no significant differences in the predicted probability of degree completion, although Asian American students have been shown to graduate at higher rates than White students (Astin et al., 1996; Tinto, 1993) and being Asian American was a positive predictor of degree completion in research conducted by Cabrera et al. (2003). Being African American was a negative predictor of degree completion only in the analysis of four-year graduation rates, in contrast to other research which showed higher attrition rates for this population (Tinto) and a negative correlation to persistence (Berger & Milem, 1999). In all analyses, being Hispanic was a negative predictor of degree completion from UT Austin, and this is consistent with other research (Astin et al., Cabrera et al.; Tinto). Hispanic students were 33.6% less likely to graduate in four years than White students, and the gap in achievement grew to 48% by six years after admission. This suggests a difference in willingness or ability to remain enrolled for longer periods when degree completion is delayed. Berkner et al. (2002) observed a similar pattern among low socioeconomic status students; this study was unable to

include family income as a variable, and it would be important to ascertain what influence ability to pay may exert before drawing conclusions based on race or ethnicity alone.

Differences in Time-to-Degree between Groups

To address the common concern among students that study abroad participation delays graduation, time-to-degree was compared between participants and all non-participants (including applicants), and then ordinal logistic regression was used to examine whether participation affected the predicted probability of time-to-degree. Significant differences in time-to-degree were observed in chi-square analyses; however, a shorter period of enrollment prior to graduation was positively associated with study abroad participation, the reverse of the assumed relationship between participation and time-to-degree.

In the analysis of the predicted probability of time-to-degree, participation was not a significant factor in the model, although the GPA-participation interaction was significant. The significant interaction was explained by the graphical representation of the equation contained in Figure 12, which showed that the greatest disparity in time-to-degree between participants and non-participants occurred at the boundary line between graduation within four years versus more than four years and that the effect changed as GPA changed. Individuals with GPAs below 3.30 were more likely to graduate in four years if they had not studied abroad, while individuals with GPAs above 3.30 were more likely to graduate in four years if they had studied abroad. Almost no differences were observed with respect to graduation within five years versus more than five years, or within six years versus more than six years between participants and non-participants.

The differences observed at the boundary line for graduation in four years most likely reflect the challenges upperclassmen, who comprise the majority of participants, face when they integrate an overseas experience into degree requirements late in their academic careers. Students with lower GPAs may also have other factors which contribute to the difference in time-to-degree results within four years of admission, such as the need to repeat courses, or requirements for remedial coursework. These questions could not be answered by the dataset available, and may warrant further investigation.

Although a review of the literature did not find a parallel analysis of the predicted probability of time-to-degree, other researchers have also observed a lower mean time-to-degree among participants versus non-participants (Flash, 1999; Posey, 2003). Like the current study, Posey's results were also statistically significant. The results of the regression model verify that the very small effect size observed in chi-square analyses accurately reflected the negligible real difference in time-to-degree between participants and non-participants. Contrary to students' fears, study abroad participation did not delay graduation among participants in this cohort, a fact which would be helpful for prospective participants to know.

Two possible reasons for the time-to-degree results at UT Austin suggest themselves. First, given that over 50% of participants enrolled in short-term programs, it may be that participants were able to progress more quickly because study abroad represented an additional term of enrollment for them. Second, alumni interviews indicated that degree progression was a significant factor in the decision-making process; it may be that those participants who successfully planned study abroad into their

undergraduate careers were also better at planning degree progress overall, and some may have used Advanced Placement credit to assist with this.

In analyses of time-to-degree, the lack of difference observed between participants and applicants and between applicants and non-participants is also worthy of note. Before collapsing non-participant and applicant categories into the "all non-participants" category, separate analyses were run which showed no significant differences in time-to-degree. This again suggests a continuum with participants and non-participants at the outer ends of the range and applicants as a middle group with similarities to both. However, unlike the previous analyses of degree completion, applicants do not have significantly different outcomes from the other groups in terms of their average time-to-degree.

Three additional variables included in the regression model were also significant predictors of the probability of time-to-degree: GPA at sophomore standing, gender, and being Hispanic. The most surprising finding was the inability of GPA to predict time-to-degree at the lowest GPA levels. Students with a GPA at or below 1.0 at the end of the freshman year had an almost equal likelihood of graduating in four, five, six, or more than six years. In contrast, students at the higher GPA levels were increasingly likely to graduate the longer they were enrolled. Other variables not accounted for in this model clearly impacted the time-to-degree of low GPA students, and research cited elsewhere in this study did not shed light on this phenomenon. This variation in predicted probability of time-to-degree for low-GPA individuals may result from different causes for weak initial academic performance, which in turn cause differential outcomes in the length of enrollment prior to graduation. These differences could also reflect utilization of

academic support services, such as tutoring, among some students and not others. This is another area for further research.

Female students were more likely to graduate in less time than male students in this cohort, a finding corroborated by Astin et al.'s (1996) data which showed greater gains in degree completion over time for male versus female students. More students graduating later would necessarily increase the average time-to-degree as well. This finding seems consistent with the disparity in degree completion between male and female students and suggests that not only are males less likely to graduate, they are encountering more difficulties in degree progression than are females. This could be due to the effect of non-academic activities or higher representation in majors which often do take longer, such as Engineering.

Among race/ethnicity categories, being Hispanic was the only significant predictor in this equation, and increased the likely time-to-degree in comparison to White students. Again, time-to-degree research was not available to compare results, but Astin et al.'s (1996) finding that non-White students made the greatest gains in degree completion between four and nine years post-admission suggests a similar trend in time-to-degree for the Hispanic students in their study. Because of the nature of this analysis, it is positive that no significant differences were observed for African American students in the cohort, and this finding contrasts with the inference of Astin et al.'s findings.

Differences in Degree Completion and Time-to-Degree among Participants

Comparisons among study abroad participants focused on differences in degree completion and time-to-degree based on the type of program in which students

participated, the length of the program, and the student's classification at the time of participation.

Program type. Analyses comparing degree completion by participation in faculty-led, affiliated, or exchange programs yielded no significant findings at four, five, six, or eight years. However, in pairwise comparisons, significant differences with small or very small effect sizes were observed. Faculty-led program participants had significantly lower four-year degree completion rates than exchange or affiliated participants, and significantly lower five-year degree completion rates than affiliated participants. Analysis of time-to-degree and program type verified that participants in faculty-led programs took significantly longer to graduate than exchange or affiliated participants. There were no other significant pairwise interactions.

The finding that faculty-led participants take longer to graduate than participants in affiliated or exchange programs was unexpected. Faculty-led programs offer UT courses abroad and are typically short-term, two factors which are assumed to facilitate degree progress and applicability of credit to degree plans, thereby contributing to on-time graduation. Since almost all UT faculty-led programs are short-term, it seems likely that the program model itself does not contribute to lower on-time and five-year graduation rates, but that something about the participants enrolling in these programs may lead to this differential outcome.

Faculty-led programs are the most readily accessible form of study abroad. They are heavily marketed on campus, and faculty directly promote programs they lead to students they teach or have taught. This direct advocacy and connection to UT is widely believed to cause students who may not otherwise study abroad to participate. If this

belief is accurate, then it may also be the case that these programs enroll students who are somewhat different than those in other program types. Some possible differences include: uncertainty about academic major, with study abroad participation as a manifestation of the desire to explore academic options; a desire for new experiences, which could reflect a less goal-oriented approach to college; or the fact that faculty-led programs don't require as much planning as other types of programs, and so more individuals who do not plan carefully (including for degree progress) are able to participate. Because the differences in degree completion disappear by six years post-admission, differences in classification at the time of participation are not likely to be a factor. However, the size of the effect for significant relationships indicates that differences are minimal at best, and this is supported by the similarly high degree completion rates between participants in different program types.

Program length. Graduation rates were significantly different at five, six, and eight years based on whether or not the participant took part in a short-term, mid-length, or long-term program. In pairwise comparisons, long-term program participants had significantly lower graduation rates at all time intervals than mid-length program participants, and had significantly lower graduation rates at four, five, and six years post-admission when compared to short-term participants. In addition, long-term program participants took significantly longer to graduate than did mid-length or short-term participants. No differences in degree completion rates or time-to-degree were observed between mid-length and short-term participants.

Findings related to time-to-degree and program length make sense when you consider that a full year abroad represents up to 25% of a student's undergraduate

enrollment. Academic systems are structured very differently around the world, and it is rare to find another institution or organization that offers a full year's worth of courses that apply directly to UT degree requirements. However, the finding that degree completion rates differ significantly based on the length of study abroad participation was unexpected. Sutton and Rubin (2007) found that students in programs less than eight weeks in length had higher four-year graduation rates than those in longer programs; however, no other research reviewed for this study included an analysis of degree completion by program length. Some possible reasons why year-long participants were less likely to graduate than other participants include: students who spend a year abroad may discover that a different institutional environment or a major not offered at UT better suits them, and subsequently transfer; students may have desired a longer time period abroad to remove themselves from a situation at home, and subsequently continued that pattern of separation; or, drawing on Tinto's theory of student departure, year-long participants may be less committed to the goal of degree completion from UT, or become less committed as a result of an extended absence.

Classification at participation. Participants' exhibited significant differences in degree completion rates at four through eight years post-admission based on their classification at the time they went abroad. Participants who went abroad as underclassmen had significantly lower degree completion rates at all time intervals compared to those who went abroad at juniors, and at five, six, and eight years after admission when compared to participants who were seniors. Juniors had higher four-year graduation rates than seniors, and no significant differences were observed in subsequent comparisons. Although effect sizes were again small, the size of the effect was greatest

between juniors and underclassmen, where it increased through six years post-admission and then decreased. The effect size increased in all comparisons of underclassmen and seniors, and ended with the same effect size as that observed in the comparison to juniors. Among participants, no significant differences existed in time-to-degree analyses based on classification at the time of participation.

In contrast to Sutton and Rubin's (2007) findings, participants who were underclassmen showed lower four- and five-year graduation rates than did participants who were upperclassmen when they went abroad, and degree completion rates were lower in every analysis. For those individuals who do participate, when they go abroad in their undergraduate career does not affect time-to-degree, but it does seem to yield differential outcomes in terms of graduation from UT. This may occur for reasons similar to those suggested previously: discovery early in their academic career that another major or institution might suit them better; lower commitment to the goal of graduating, despite participation in an activity known to foster student engagement; a desire for new experiences with a lower emphasis on the academic aspects of study abroad; or a desire to remove themselves from a situation through study abroad which ultimately leads them to leave the university. While the disparity in degree completion rates was the largest seen in participant comparisons, the six-year graduation rate for underclassmen participants still surpassed the average graduation rate for this cohort by almost 10% (87.2% versus 77.8%).

Alumni Perspectives on Study Abroad

Interviews with alumni from the FTIC entering cohort of 2002 sought to provide context for the quantitative findings in this research. Over half of entering freshmen plan

to study abroad, yet only 13% of the students in this cohort did so. Although these findings indicate that study abroad does positively impact degree completion when other background variables are held constant, interviews with alumni demonstrated the varied factors which make participation challenging or impossible for students. To promote participation for a broader population of students, it is important to learn from the experience of alumni about their interest in study abroad, the encouragement they may or may not have received, and the issues which may have prevented participation. In addition, the reflections of alumni participants on how they benefited from study abroad reaffirmed the findings of other researchers on this topic, and their assessment of the impact of time-to-degree vis-à-vis participation validated the findings of quantitative analyses in this study.

Consistent with the findings of other studies, respondents who had not studied abroad were interested in and aware of opportunities (Carlson et al., 1990; Chieffo, 2000; Lucas, 2009; Spiering & Erickson, 2006). The need for individuals to volunteer for the interviews most likely skewed the response rate in terms of interest in study abroad, as almost all individuals indicated that they had considered study abroad as undergraduates. The lower response rates from non-participants invited to participate in the interviews supports this conclusion; these individuals had not initiated an application to study abroad as undergraduates, and therefore this group likely contained a significant number of individuals who were not interested in study abroad as undergraduates or graduate students (their classification at the point when contacted about the interviews).

Interviews also highlighted the difficulty of categorizing individuals as different from each other based on their status as a study abroad participant, applicant, and non-

participant. In keeping with findings from the quantitative portion of this study, applicants were like non-participants in some ways and participants in other ways. Being an "applicant" for the purpose of this research meant that the individual had an application record which required attendance at an information session or contact with a study abroad advisor plus a request to be authorized, all of which are indicators of seriousness of purpose about study abroad. In reality, several non-participants had given study abroad considerable thought and had realized they could not participate without requesting access to the application system, while two of the applicants did not realize they were categorized as such. Applicants were also very similar to participants, and had almost identical participation rates in enriching education activities if study abroad participation itself was omitted. This combination of factors made clear that applicant and non-participant statuses were more meaningful categories for quantitative analyses versus interviews, and those individuals who had not considered study abroad as undergraduates were underrepresented among respondents.

Study abroad appealed to the individuals who had considered participation for a variety of reasons which fell into four broad categories: social skills/experience, academic enhancement, cultural experience/knowledge, and global perspectives. These broad categories of interest were consistent with the motivating factors noted in other research, although cultural interest appeared to be a less common reason cited by the UT Austin respondents than others have observed (Anderson, 2007; Carlson et al., 1990; Chieffo, 2000; Kasravi, 2009). Participants had more reasons they wanted to study abroad on average than did individuals in the other groups. This may have been the result of the decision-making process itself, which requires reflection on the decision to

participate over a long period of time, or it could be a reflection of the greater desire of participants to study abroad in contrast to other individuals who did not participate. Certain categories of response were also more common depending on whether or not the individual was a participant, applicant, or non-participant. For example, participants were more likely to have wanted to study abroad because of the endorsement of others, they expressed a desire to travel or "get away" more frequently than members of the other groups, and they were also more likely to see language acquisition as a desired outcome. It is unclear if these differences may have led to a stronger sense of the benefit of study abroad among participants compared to others, or if some reasons motivate individuals more strongly than others. The decision to study abroad is highly contextual, so this latter possibility seems more likely.

When individuals were asked whether they had received encouragement or discouragement with respect to their interest in study abroad, results were unexpectedly mixed. Over half of participants had been encouraged to study abroad, but three quarters of non-participants had also received encouragement. The most common sources of encouragement were: family; friends; a general sense of encouragement within the college, department or the university; faculty; and academic advisors. Response rates for the latter categories were surprisingly low and indicated a lack of direct encouragement to students from the academic structures of the university. This is cause for concern, particularly for men given that other research indicates that male students need to hear that study abroad is valued by their faculty and college in order to see it as a legitimate academic opportunity (Lucas, 2009). It may be that the lack of a clear message from faculty and colleges contributes to the disparity in participation rates between men and

women at the university. Only one participant indicated direct discouragement about study abroad participation, but several individuals who did not study abroad indicated that they themselves were the greatest source of discouragement from participating.

Both Peterson (2003) and Lucas (2009) found that barriers to study abroad participation were consistent among participants and non-participants, and that was also the case in this research. The most frequently cited barriers in this and other research were academic and financial. Over half of respondents expressed concern that participation would delay graduation, and this factor prevented participation for several individuals. Financial concerns were raised by participants and non-participants; applicants may not have reached this point in the decision-making process because they had each realized that participation was incompatible with their academic or career plans very early in the process. Participants raised a number of issues related to cultural adjustment and the complexity of the pre-departure process, but did not frame them as barriers so much as concerns. It was interesting to note that while the desire to take courses abroad was not a commonly cited reason for individuals' interest in participation, the academic integration of participation into their course of study was crucial for over half of respondents. This emphasizes the academic nature of study abroad, and reiterates the importance of messages from the college and faculty regarding participation to ensure that students have the time to plan appropriately.

Individuals who had studied abroad believed they had benefited in multiple ways. It was clear from these interviews that study abroad had a significant impact on participants. Benefits included the personal connections individuals had made abroad, the life changing experience of living overseas, personal growth, the development of a global

perspective, and the value of study abroad to employers, among others. The majority of respondents, including those who had not studied abroad, indicated that they would participate if they had the chance to do it over again.

As a follow up to quantitative analyses of time-to-degree, participants were also asked if study abroad had delayed their graduation. The average time-to-degree for this group was 4.0 years, lower than the university-wide average and the average for participants overall. Responses emphasized that timely graduation was the result of careful planning, and was a significant requirement in order to participate at all. Two individuals did indicate that they graduated late due to participation, and that it was the choice to study abroad for a full year that made the difference. This corroborates the quantitative finding that long-term participants do experience delayed graduation, and indicates that this may be a known and accepted risk by the small number of individuals who choose to go abroad for a year.

Implications of the Research

The central findings of this study indicate that study abroad participation contributes to degree completion, a central goal of higher education and a continuing challenge for our institutions. Interest in study abroad among matriculating students has been increasing steadily over the last decade. The convergence of student interest in an activity that also fosters retention and degree completion should be maximized through greater access to study abroad opportunities, which requires continued work on the barriers which prevent participation.

Alumni interviewed for this study identified academic and financial concerns as the most significant barriers to participation. Academic barriers can be addressed in

several ways. First, students need more information on study abroad early in their academic careers at the university so they can plan for participation. A recent survey of UT students indicated that graduation in four years is very important or essential to nearly half of all undergraduates (IMA, 2011), which corroborates the feedback from alumni interviews. The results of this research, which show that participants had a slightly shorter time-to-degree and that participation did not affect predicted time-to-degree, can assist in dispelling the perception that study abroad delays graduation. Second, program options need to offer courses which contribute to degree progress, and this information needs to be readily available to students for planning purposes. And third, for degrees which do not have appropriate academic matches among study abroad programs, students should be encouraged to complete core requirements or electives abroad, or targeted programming should be developed for these populations. In some cases, internships or service experiences abroad may actually be a better fit and should be considered as well.

Financial barriers are equally important to address, yet more difficult to improve on a university-wide scale. Additional scholarship funding is always desirable, but it is not feasible to think that funds can be secured to assist 50% of participants, the proportion of financial aid recipients at UT. A more sustainable option is to ensure that programming is available at different price points, and to consider cost as a significant factor in program development and selection. It is less clear that the cost-benefit question raised by several alumni can be addressed directly. Individuals who weighed their desire to participate against the benefit to themselves and the cost of participation were not simply concerned about cost, they were concerned about the perceived importance of the activity itself to their individual goals. The most effective way to ensure that

participation is relevant for a greater proportion of students is again by ensuring the academic fit of programs. In addition, colleges, departments, and faculty are critical proponents of study abroad; without clear messages of support and endorsement, study abroad is more likely to be perceived as less academically legitimate than on-campus courses.

Perhaps the most unexpected, and intriguing, result of this research was the greater effect of study abroad participation on predicted probability of degree completion for students with lower GPAs at the conclusion of their freshmen year versus higher GPA students. This effect occurred independent of any interaction, which means that participation could potentially help increase degree completion rates for both academically at risk students and for other groups with lower graduation rates, such as Hispanic students and men. The significant difference in predicted graduation rates between participants and non-participants with low GPAs stands in stark contrast to the actual eligibility criteria for study abroad; the minimum recommended GPA for any program type at UT Austin is 2.5, with most above this level. This finding suggests the need to reconsider eligibility criteria in order to make study abroad available to students with lower GPAs. The fact that those individuals with lower freshman year GPAs who did participate were still more likely to graduate than their peers suggests that GPA should be a secondary eligibility criteria, and that other measures should be weighed equally in assessing students' likely success abroad. This is most feasible with faculty-led and exchange programs where the home institution has some control over eligibility and selection, and requires further discussion to ensure modifications are in-line with academic performance expectations once abroad.

Results of this research indicated that increased degree completion rates occurred regardless of the type or length of program in which students participated. While students themselves are less likely to be interested in this fact, it is important for university administrators and faculty to realize that participation affects retention and degree completion, with limited variation in effect due to the type or length of the program. The *lowest* graduation rate in six years by program type was 94.2% (faculty-led participants), more than 16% above the overall rate for this cohort. Even the long-term participants, who had noticeably lower four- and five-year graduation rates, still had an average six-year graduation rate of 87.5%, nearly 10% above the cohort rate. Faculty-led participants also had a slightly longer time-to-degree than participants in other program types. This stands in contrast to the belief that because these programs are shorter and provide university curriculum abroad, they facilitate degree completion. The differences observed in graduation rate and time-to-degree for faculty-led participants may in fact be a product of the ease with which students can participate, and these programs may attract more students who are less certain of their major or have not planned their degree progress as well as participants in other types of programs. The slightly different outcomes for participants in this category of program could be an indicator of what would happen if study abroad participation across program types expands beyond the current population of students who are able to successfully navigate the somewhat complicated application, pre-departure, and course equivalency processes.

Results for analyses by classification at the time of participation also indicated better degree completion rates across categories than for the cohort overall, with no differences in time-to-degree based on class standing at the time of participation. While

degree completion rates for underclassmen participants were lower than for upperclassmen, they were still almost 10% higher than the class average. The highest attrition rates occur in the first two years of university attendance, so these are the critical years for engaging students in order to retain them. While a greater proportion of underclassmen abroad may reduce the gap in outcomes between participants and non-participants, it still clearly contributes to higher graduation rates than for non-participants. This suggests that study abroad participation early in the student's academic career may be helpful in retaining younger students to degree completion.

Beyond the direct emphasis of this research on outcomes of study abroad participation, regression analyses yielded useful findings on other variables which predict degree completion. As mentioned above, male and Hispanic students had lower predicted graduation rates than other groups, which emphasized the need to continue and enhance university efforts to retain and graduate students in these categories. The negative predictive power of SAT composite score was unexpected. It is unclear whether this means that the university is better than expected at graduating students who enter with low SAT scores, or has unexpected attrition among students at the high end of the range. The fact that degree completion rates for students with high SAT scores do not change as much between four and six years post-admission as do the rates for students with lower SAT scores indicates that whatever is happening with these students occurs prior to the four-year enrollment mark. Further investigation should occur to determine the cause of this finding, whether it occurs at other institutions of the same size and type, and if other variables not accounted for in this model factor into these results.

Recommendations for Further Research

While the research conducted in this study shed light on the relationship between study abroad participation, degree completion, and time-to-degree, several variables known to correlate to these academic outcomes were not available for consideration. Family income and parental educational level are often used as partial measures of socioeconomic status, a key variable absent from this research. Lower socioeconomic status is known to correlate with lower retention and degree completion rates, and differences based on race or ethnicity often in fact mask the effect of socioeconomic status (Cabrera, Burkum, & LaNasa, 2005). For these reasons, additional research including these variables will be important in ascertaining whether differences in degree completion are a product of socioeconomic status and/or cultural values particular to specific racial and ethnic groups.

The original research design intended to assess whether students' college contributed to the predictive models for degree completion or time-to-degree. In the process of setting up data for analysis, it became clear that this idea as originally conceived was not practicable for this dataset. Data were not available to record the last college of enrollment for individuals who did not graduate, and the frequency with which students double major at UT Austin further complicated the matter. Because participation rates vary across disciplines, it would be useful to conduct this research including college or major. These data could shed light on whether study abroad has an equal effect across disciplines, and also whether the prevalence of programming and participation in some colleges is inflating or deflating the results across the university.

The inclusion of applicants as an attempt to control for the motivational factors which distinguish students who study abroad from others who do not was somewhat helpful, but could not fully address this question. For example, one plausible reason that students with low GPAs experience a higher than predicted probability of graduating when they study abroad is that those individuals were extremely motivated or determined in the first place, and study abroad only somewhat enhanced their probable graduation rate. The average GPA at the institution is above a 3.0, therefore low GPA students who persist are likely to demonstrate high levels of motivation and perseverance compared to their peers who do not. Additional research on the effect of these kinds of personal factors would help shed light on the results in the current research.

An additional area of investigation which this study could not address is whether or not the benefits associated with participation apply equally to non-credit bearing international activities such as work, internships, research, or volunteer opportunities abroad. Are these activities equally engaging, and do they also foster higher degree completion rates like traditional study abroad opportunities? What effect might they have on time-to-degree? It is possible that part of the shorter time-to-degree observed here and elsewhere occurs because study abroad participants engage in an extra level of academic planning to graduate. If that is the case, then this would not necessarily be the case for non-course based activities. Given the rapid expansion of less traditional opportunities for students to go abroad, it would be helpful to have a clearer understanding of how these options are the same or different from study abroad participation in terms of degree completion and time-to-degree.

The results of this research also suggest a topic for further investigation which is unrelated to study abroad. As mentioned above, the unexpected negative predictive value of SAT composite score in the model to assess degree completion should be investigated further at this university. It is unclear whether this is a direct relationship or is mitigated by variables not included in this model. Evidence that this relationship exists at other institutions was not available; it may be a UT Austin specific phenomena or a broader pattern specific to certain types of institutions or institutions with a particular student profile. Regardless, further research specifically at UT Austin should investigate this relationship to determine its cause if possible.

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Appendices

Appendix A

IRB Approval Letters

University of Nebraska Lincoln

June 29, 2010

Heather Barclay Hamir
Department of Educational Administration

Larry Dlugosh
Department of Educational Administration
141C TEAC, UNL, 68588-0360

IRB Number: 20100610926EP
Project ID: 10926
Project Title: Study Abroad Participation and Undergraduate Degree Completion Rates

Dear Heather:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study based on the information provided. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Date of EX Review: 06/24/2010

You are authorized to implement this study as of the Date of Final Approval: 06/29/2010. This approval is Valid Until: 06/28/2011.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
* Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
* Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
* Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
* Any breach in confidentiality or compromise in data privacy related to the subject or others; or
* Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

For projects which continue beyond one year from the starting date, the IRB will request continuing review and update of the research project. Your study will be due for continuing review as indicated above. The investigator must also advise the Board when this study is finished or discontinued by completing the enclosed Protocol Final Report form and returning it to the Institutional Review Board.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,

William Thomas, Ph.D.
Chair for the IRB

NUgrant RESEARCH ADMINISTRATION SYSTEM

Message

* Indicates Required Fields

Printer Friendly Version

Sent By: Rachel Wenzl
Sent On: 01/12/2011 04:40 pm
Reference: IRBProjectForm - 15313
Subject: IRB Project Approved
Message: Your project has been approved by the IRB.

Project Title: Study Abroad Participation and Undergraduate Degree Completion Rates

Approvers Comments:

Dear Ms. Barclay Hamir and Dr. Dlugosh,

The change request for project #10926 titled, Â"Study Abroad Participation and Undergraduate Degree Completion Rates,Â" has been approved. It has been approved to conduct qualitative phone interviews.

Your stamped and approved informed consent form has been uploaded to NUgrant. Please use this form to make copies to distribute to participants. If changes need to be made, please submit the revised informed consent form to the IRB for approval prior to using it.

Please allow sufficient time for the official IRB approval letter to be available within NUgrant.

Cordially,

Rachel Wenzl

Research Compliance Services Specialist

OFFICE OF RESEARCH SUPPORT

THE UNIVERSITY OF TEXAS AT AUSTIN

P.O. Box 7426, Austin, Texas 78713 (512) 471-8871 -FAX (512 471-8873)
North Office Building A, Suite 5.200 (Mail code A3200)

FWA # 00002030

Date: **05/25/10**

PI(s): **Heather E Barclay Hamir** Department & Mail Code: **INTERNATIONAL OFFICE** **A7000**

Title: **Study Abroad Participation and Undergraduate Degree Completion Rates**

IRB EXEMPT DETERMINATION – IRB Protocol # **2010-05-0022**

Dear: **Heather E Barclay Hamir**

Recognition of Exempt status based on 45CFR 46.101(b).
Qualifying Period: 05/25/2010 - 05/24/2013 *Expires 12 a.m. [midnight] of this date.*
A continuing review will need to be submitted in three years if the research is still pending.

(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Responsibilities of the Principal Investigator(s):

Research that is determined to be Exempt from IRB review is not exempt from protection of the human subjects. The following criteria to protect human subjects must be met:

1. The Principal Investigator assures that all investigators and co-investigators are trained in the ethical principles, relevant Federal Regulations and institutional policies governing human subject research.

2. The Principal Investigator assures that human subjects will voluntarily consent to participate in the research when appropriate (e.g. surveys, interviews) and will provide subjects with pertinent information (e.g. risks and benefits, contact information for investigators and IRB Chair).

3. The Principal Investigator assures that human subjects will be selected equitably, so that the risks and benefits of the research are justly distributed.

4. The Principal Investigator assures that the IRB will be immediately informed of any information or unanticipated problems that would increase the risk to the human subjects and cause the category of review to be upgraded to Expedited or Full Review.

5. The Principal Investigator assures that the IRB will be immediately informed of any complaints from participants regarding their risks and benefits;

6. The Principal Investigator assures that confidentiality and privacy of the subjects and the research data will be maintained appropriately to ensure minimal risk to subjects; and

7. The Principal Investigator will report, by amendment, any changes in the research study.

These criteria are specified in the PI Assurance Statement that must be signed before determination of Exempt status will be granted. The Responsible Investigator's signature acknowledges that he/she understands and accepts these conditions. Investigators can refer to the Office of Research Support (ORS) website, www.utexas.edu/irb for specific information on training, voluntary informed consent, privacy, and how to notify the IRB of unanticipated problems.

1. **Closure:** Upon completion of the research project, a closure request must be submitted to the ORS.

2. **Unanticipated Problems:** Any unanticipated problems or complaints must be reported to the IRB/ORS immediately. For a description of unanticipated problems, please refer to the ORS webpage: http://www.utexas.edu/research/rsc/humansubjects/policies/section7.html#7.3

3. **Informed Consent:** The informed consent procedures laid out within your research proposal must be followed.

4. **Continuing Review:** If the study will continue beyond the three year approval period, a continuing review application must be filed.

5. **Amendments:** Amendments do not need to be filed with the ORS if the amendments do not change the risk level of the study (for example: increasing sample size, adding or removing co-PIs, adding or removing research sites, or minor modifications to the research protocol). Changes altering the level of risk to participants must be requested by submitting an amendment application and revised proposal to the ORS prior to those changes being implemented. For a description of the types of modifications that require an amendment application, refer to the ORS webpage: http://www.utexas.edu/research/rsc/humansubjects/policies/section6.html#635b , or call 471-8871.

Sincerely,

Jody L. Jensen, Ph.D.
Professor
Chair, Institutional Review Board

OFFICE OF RESEARCH SUPPORT

THE UNIVERSITY OF TEXAS AT AUSTIN

P.O. Box 7426, Austin, Texas 78713 (512) 471-8871 -FAX (512 471-8873)
North Office Building A, Suite 5.200 (Mail code A3200)

FWA # 00002030

Date: **11/03/10**

PI(s): **Heather E Barclay Hamir** Department & Mail Code: **INTERNATIONAL OFFICE**

Title: **Perceived Benefits and Risks of Study Abroad Participation**

IRB EXPEDITED APPROVAL: IRB Protocol # **2010-10-0148**

Dear: **Heather E Barclay Hamir**

In accordance with the Federal Regulations the Institutional Review Board (IRB) reviewed the above referenced research study and found it met the requirements for approval under the Expedited category noted below for the following period of time: **11/03/2010 - 11/02/2011**. *Expires 12 a.m. (midnight) of this date.*

Expedited category of approval:

☐ (1) Clinical studies of drugs and medical devices only when condition (a) or (b) is met. (a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review). (b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

☐ (2) Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows: (a) from healthy, non-pregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or (b) from other adults and children2, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

☐ (3) Prospective collection of biological specimens for research purposes by Non-invasive means. Examples:
(a) hair and nail clippings in a non-disfiguring manner;
(b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction;
(c) permanent teeth if routine patient care indicates a need for extraction;
(d) excreta and external secretions (including sweat);

(e) uncannulated saliva collected either in an un-stimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue;
(f) placenta removed at delivery;
(g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor;
(h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the Process is accomplished in accordance with accepted prophylactic techniques;
(i) mucosall and skin cells collected by buccal scraping or swab, skin swab, or mouth washings;
(j) sputum collected after saline mist nebulization.

☐ **(4)** Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications).
Examples:
(a) physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy;
(b) weighing or testing sensory acuity;
(c) magnetic resonance imaging;
(d) electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography;
(e) moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

☐ **(5)** Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for non-research purposes (such as medical treatment or diagnosis). (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(4). This listing refers only to research that is not exempt).

☒ **(6)** Collection of data from voice, video, digital, or image recordings made for research purposes.

☒ **(7)** Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt).

☐ Use the attached approved informed consent.

☒ You have been granted a Waiver of Documentation of Consent according to 45 CFR 46.117 and/or 21 CFR 56.109(c)(1).

☐ You have been granted a Waiver of Informed Consent according to 45 CFR 46.116(d).

Responsibilities of the Principal Investigator:

1. Report immediately to the IRB any unanticipated problems.

2. Ensure the proposed changes in the approved research during the IRB approval period will not be applied without IRB review and approval, except when necessary to eliminate apparent immediate hazards to the subject. Changes in approved research implemented without IRB review and approval initiated to eliminate apparent immediate hazards to the subject must be promptly reported to the IRB, and will be reviewed under the unanticipated problems policy to determine whether the change was consistent with ensuring the subjects continued welfare.

3. Report any significant findings that become known in the course of the research that might affect the willingness of subjects to continue to participate.

4. Ensure that only persons formally approved by the IRB enroll subjects.

5. Use only a currently approved consent form (remember that approval periods are for 12 months or less).

6. Protect the confidentiality of all persons and personally identifiable data, and train your staff and collaborators on policies and procedures for ensuring the privacy and confidentiality of subjects and their information.

7. Submit for review and approval by the IRB all modifications to the protocol or consent form(s) prior to the implementation of the change.

8. Submit a Continuing Review Application for continuing review by the IRB. Federal regulations require IRB review of on-going projects no less than once a year (a Continuing Review Application and a reminder letter will be sent to you two months before your expiration date). If a reminder is not received from Office of Research Support (ORS) about your upcoming continuing review, it is still the primary responsibility of the Principal Investigator not to conduct research activities on or after the expiration date. The Continuing Review Application must be submitted, reviewed and approved, before the expiration date.

9. Upon completion of the research study, a Closure Report must be submitted to the ORS.

10. Include the IRB study number on all future correspondence relating to this protocol.

If you have any questions call or contact the ORS (Mail Code A3200) or via e-mail at orsc@uts.cc.utexas.edu.

Sincerely,

Jody L. Jensen, Ph.D.
Professor
Chair, Institutional Review Board

Appendix B

Informed Consent Forms

IRB APPROVED ON:11/03/2010 DO NOT USE AFTER: 11/02/2011

IRB PROTOCOL # 2010-10-0148

Title: Perceived benefits and risks of study abroad participation
Conducted By: Heather Barclay Hamir (PI)
Of The University of Texas at Austin: *Study Abroad Office/WOH 2.104C*
Telephone: 512-232-5913

You are being asked to participate in a research study. This form provides you with information about the study. The person in charge of this research will also describe this study to you and answer all of your questions. Please read the information below and ask any questions you might have before deciding whether or not to take part. Your participation is entirely voluntary. You can refuse to participate or stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. You can stop your participation at any time and your refusal will not impact current or future relationships with UT Austin or participating sites. To do so simply tell the researcher you wish to stop participation. The researcher will provide you with a copy of this consent for your records.

The purpose of this study is to better understand the perceived value of and interest in study abroad among a small sample of individuals (15-21) who began study at UT in summer or fall 2002. The information received through interviews will complement a separate study into the relationship between study abroad participation and degree completion rates based on data for first-time-in-college freshmen in the 2002 entering cohort at UT.

If you agree to be in this study, we will ask you to do the following things:

- Participate in a single phone interview consisting of 4-9 open-ended questions.
- Allow the phone interview to be recorded, or if you are not comfortable being recorded, allow notes to be taken during the interview.

Total estimated time to participate in the study is 15-30 minutes, depending on the number of questions asked.

Risks of being in the study

- The risk associated with this study is no greater than everyday life.
- Your name will not be associated with the audio recording or transcribed notes; therefore loss of confidentiality is extremely unlikely.

Benefits of being in the study

- This study does not benefit individual participants. However, these interviews contribute to a greater understanding of the decision making process related to undergraduate students' decision to study abroad or not. This information can assist the university in addressing institutional barriers to participation and improving advising and information for students.

Compensation:

- Individuals participating in a phone interview will receive a $10 gift certificate by email to one of several vendors, for example, Amazon (preference to be confirmed at the time of the interview). You will be responsible for any taxes assessed on the compensation.

Confidentiality and Privacy Protections:

- Interviews will be audio taped. Taped will be coded so that no personally identifying information is visible on them and stored securely in a locked filing cabinet.
- Recorded interviews will be heard only for research purposes by the investigator and they will be erased after they are transcribed.

The records of this study will be stored securely and kept confidential. Authorized persons from The University of Texas at Austin and members of the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. This research is jointly approved by the University of Nebraska, Lincoln, therefore authorized persons and members of the University of Nebraska, Lincoln Institutional Review Board also have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. All publications will exclude any information that will make it possible to identify you as a subject. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

Contacts and Questions:

If you have any questions about the study please ask now. If you have questions later, want additional information, or wish to withdraw your participation call the researcher conducting the study. The researchers name, phone number, and e-mail address are at the top of page one.

If you would like to obtain information about the research study, have questions, concerns, complaints or wish to discuss problems about a research study with someone unaffiliated with the study, please contact the IRB Office at (512) 471-8871 or Jody Jensen, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects at (512) 232-2685. Anonymity, if desired, will be protected to the extent possible. As an alternative method of contact, an email may be sent to orsc@uts.cc.utexas.edu or a letter sent to IRB Administrator, P.O. Box 7426, Mail Code A 3200, Austin, TX 78713.

You will be given a copy of this information to keep for your records.

Appendix C

Recruitment E-mail

Dear [Name],

My name is Heather Barclay Hamir and I am the Director of the Study Abroad Office at The University of Texas at Austin, as well as an Educational Administration Ph.D. candidate at the University of Nebraska, Lincoln. I am contacting you to request your participation in a brief (15-30 minute), confidential phone survey which will ask you to reflect on your time as an undergraduate at UT and your perceptions about study abroad participation. **Participation is entirely voluntary**. In addition, each participant will be compensated with a $10 gift certificate to Amazon, The University Co-op or Starbucks.

The purpose of these interviews is to develop a greater understanding of the reasons why individuals considered or did not consider studying abroad as undergraduates at UT. This information will assist study abroad professionals and institutions to address the barriers to participation and improve advising and information materials for students. This study expands on an existing research project which investigates the graduation rates and time-to-degree among individuals who entered UT during the summer or fall of 2002 as first-time-in-college freshmen, and whether or not graduation rates differ for students who did or did not study abroad.

This research is approved by the Institutional Review Boards (IRB) at The University of Texas at Austin and the University of Nebraska, Lincoln. I have attached a cover letter with more detailed information on this study, and can furnish copies of both IRB approval letters upon request.

If you are interested in participating in this phone interview, please email me and we can set up a time to speak. Thank you in advance for your consideration.

Best wishes,

Heather Barclay Hamir

Appendix D

Interview Protocol and Questions

Title: Perceived benefits and risks of study abroad participation
Principle Investigator: Heather Barclay Hamir
UNL ID: 02817895/UT EID: hb4869

Interview Protocol: all groups

1. Introduce self and describe research project. Thank individual for willingness to be interviewed.
2. Read informed consent document. Secure verbal consent.
3. Summarize the interview process: number of questions, approximate time, recording and notes, pseudonyms.
4. Begin recording interview.
5. Ask interview questions.
6. Debrief individual and check for any additional questions he/she may have.
7. Stop recording interview.
8. Confirm type of gift certificate desired and that email address where initially contacted the individual is the correct address to use for distribution.
9. Thank the individual and conclude.

Group A. Interview Questions: Study Abroad Participants

1. When did you first consider studying abroad?
2. Why did you want to study abroad? (personal enrichment, gain language ability, career impact, gain global perspective, etc.)
3. Did anyone encourage you to study abroad? (Parents, peers, university staff, professors, etc.)
4. During the process of applying and preparing for your study abroad experience, what factors concerned you about participating? (cost, degree progress, fear of the unknown, relationships, etc.)
5. Did anyone discourage you from studying abroad?
6. Did study abroad participation extend the length of time it took you to graduate?
7. Looking back, how did studying abroad benefit you? (personal, academic, professional)
8. If you had it to do over again, would you participate in a study abroad program? Why or why not?
9. Which of the following activities did you participate in as an undergraduate at UT?

    - ❑ Internship or field experience
    - ❑ community service or volunteer work
    - ❑ foreign language coursework
    - ❑ independent study
    - ❑ extra-curricular activities (student organization, sports team/club, fraternity/sorority, etc.)
    - ❑ culminating senior experience (senior project, thesis, seminar, capstone course, etc.)

Group B. Interview Questions: Applicant

1. When did you first consider studying abroad?
2. Why did you want to study abroad? (personal enrichment, gain language ability, career impact, gain global perspective, etc.)
3. Did anyone encourage you to study abroad? (Parents, peers, university staff, professors, etc.)
4. What factors caused you to decide against studying abroad? (cost, degree progress, fear of the unknown, relationships, etc.)
5. Did anyone discourage you from studying abroad?
6. If you had it to do over again, would you participate in a study abroad program? Why or why not?
7. Which of the following activities did you participate in as an undergraduate at UT?

    - ❑ Internship or field experience
    - ❑ community service or volunteer work
    - ❑ foreign language coursework
    - ❑ independent study
    - ❑ extra-curricular activities (student organization, sports team/club, fraternity/sorority, etc.)
    - ❑ culminating senior experience (senior project, thesis, seminar, capstone course, etc.)

Group C. Interview Questions: Non-Participants

1. Which of the following activities did you participate in as an undergraduate at UT?

   - ❑ Internship or field experience
   - ❑ community service or volunteer work
   - ❑ foreign language coursework
   - ❑ independent study
   - ❑ extra-curricular activities (student organization, sports team/club, fraternity/sorority, etc.)
   - ❑ culminating senior experience (senior project, thesis, seminar, capstone course, etc.)

2. As an undergraduate, did you ever consider studying abroad?

   If yes:

   a. Why did you want to study abroad? (personal enrichment, gain language ability, career impact, gain global perspective, etc.)
   b. Did anyone ever encourage you to study abroad? (Parents, peers, university staff, professors, etc.)
   c. What factors caused you not to study abroad? (cost, difficulty of process, not enough benefit, lost interest, concerns over degree progression, discouraged by others, etc.)
   d. Did anyone discourage you from studying abroad?
   e. If you had it to do over again, would you participate in a study abroad program? Why or why not?

   If no:

   a. What information did you have about study abroad?
   b. Why was study abroad an option you did not consider?
   c. Looking back, do you wish you had studied abroad? Why/why not?

Appendix E

Descriptive Statistics: Participants in Multiple Programs

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
No. Years Grad	95	2.66	7.66	4.2655	.85396
GPA Sophomore	95	1.85	4.00	3.5331	.45558
Graduated	95	1	1	1.00	.000
SAT Composite	95	770	1510	1272.00	147.869
Valid N (listwise)	95				

School Admitted To

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Engineering	5	5.3	5.3	5.3
	Communication	6	6.3	6.3	11.6
	Fine Arts	2	2.1	2.1	13.7
	Liberal Arts	30	31.6	31.6	45.3
	Natural Sciences	9	9.5	9.5	54.7
	Business	36	37.9	37.9	92.6
	Architecture	7	7.4	7.4	100.0
	Total	95	100.0	100.0	

Graduated School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Communication	9	9.5	9.5	9.5
	Education	1	1.1	1.1	10.5
	Fine Arts	2	2.1	2.1	12.6
	Liberal Arts	55	57.9	57.9	70.5
	Natural Sciences	2	2.1	2.1	72.6
	Business	18	18.9	18.9	91.6
	Architecture	8	8.4	8.4	100.0
	Total	95	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	61	64.2	64.2	64.2
	Male	34	35.8	35.8	100.0
	Total	95	100.0	100.0	

Race/Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Asian American	10	10.5	10.5	10.5
	African American	2	2.1	2.1	12.6
	Foreign	2	2.1	2.1	14.7
	Hispanic	13	13.7	13.7	28.4
	White	68	71.6	71.6	100.0
	Total	95	100.0	100.0	

Program Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Faculty-Led	34	35.8	35.8	35.8
	Affiliated	5	5.3	5.3	41.1
	Exchange	7	7.4	7.4	48.4
	Multiple Types	49	51.6	51.6	100.0
	Total	95	100.0	100.0	

Appendix F

Crosstabulations: Degree Completion Pairwise Comparisons by Study Abroad Status

Pairwise Comparisons: Non-Participants and Participants

SA Status * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
SA Status	Non-Participant	Count	3576	2912	6488
		% within SA Status	55.1%	44.9%	100.0%
		% within 4 Year Grad	90.1%	83.2%	86.9%
		Adjusted Residual	8.7	-8.7	
	Participant	Count	394	587	981
		% within SA Status	40.2%	59.8%	100.0%
		% within 4 Year Grad	9.9%	16.8%	13.1%
		Adjusted Residual	-8.7	8.7	
Total		Count	3970	3499	7469
		% within SA Status	53.2%	46.8%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

SA Status * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
SA Status	Non-Participant	Count	1988	4500	6488
		% within SA Status	30.6%	69.4%	100.0%
		% within 5 Year Grad	95.5%	83.5%	86.9%
		Adjusted Residual	13.7	-13.7	
	Participant	Count	94	887	981
		% within SA Status	9.6%	90.4%	100.0%
		% within 5 Year Grad	4.5%	16.5%	13.1%
		Adjusted Residual	-13.7	13.7	
Total		Count	2082	5387	7469
		% within SA Status	27.9%	72.1%	100.0%
		% within 5 Year Grad	100.0%	100.0%	100.0%

SA Status * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	Yes	Total
SA Status	Non-Participant	Count	1667	4821	6488
		% within SA Status	25.7%	74.3%	100.0%
		% within 6 Year Grad	95.9%	80.2%	83.7%
		Adjusted Residual	15.6	-15.6	
	Participant	Count	28	253	281
		% within SA Status	10.0%	90.0%	100.0%
		% within 6 Year Grad	1.6%	4.2%	3.6%
		Adjusted Residual	-5.1	5.1	
Total		Count	2082	44	937
		% within SA Status	27.9%	4.5%	95.5%
		% within 6 Year Grad	100.0%	2.5%	15.6%

SA Status * Graduated (8 Years) Crosstabulation

			Graduated		
			No	Yes	Total
SA Status	Non-Participant	Count	1477	5011	6488
		% within SA Status	22.8%	77.2%	100.0%
		% within Graduated	98.3%	84.0%	86.9%
		Adjusted Residual	14.7	-14.7	
	Participant	Count	25	956	981
		% within SA Status	2.5%	97.5%	100.0%
		% within Graduated	1.7%	16.0%	13.1%
		Adjusted Residual	-14.7	14.7	
Total		Count	1502	5967	7469
		% within SA Status	20.1%	79.9%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Pairwise Comparisons: Applicants and Participants

SA Status * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
SA Status	Applicant	Count	48	233	281
		% within SA Status	17.1%	82.9%	100.0%
		% within 5 Year Grad	33.8%	20.8%	22.3%
		Adjusted Residual	3.5	-3.5	
	Participant	Count	94	887	981
		% within SA Status	9.6%	90.4%	100.0%
		% within 5 Year Grad	66.2%	79.2%	77.7%
		Adjusted Residual	-3.5	3.5	
Total		Count	142	1120	1262
		% within SA Status	11.3%	88.7%	100.0%
		% within 5 Year Grad	100.0%	100.0%	100.0%

SA Status * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	No	Total
SA Status	Applicant	Count	28	253	281
		% within SA Status	10.0%	90.0%	100.0%
		% within 6 Year Grad	38.9%	21.3%	22.3%
		Adjusted Residual	3.5	-3.5	
	Participant	Count	44	937	981
		% within SA Status	4.5%	95.5%	100.0%
		% within 6 Year Grad	61.1%	78.7%	77.7%
		Adjusted Residual	-3.5	3.5	
Total		Count		1190	1262
		% within SA Status		94.3%	100.0%
		% within 6 Year Grad		100.0%	100.0%

SA Status * Graduated (8 Years) Crosstabulation

			Graduated		
			No	Yes	Total
SA Status	Applicant	Count	18	263	281
		% within SA Status	6.4%	93.6%	100.0%
		% within Graduated	41.9%	21.6%	22.3%
		Adjusted Residual	3.1	-3.1	
	Participant	Count	25	956	981
		% within SA Status	2.5%	97.5%	100.0%
		% within Graduated	58.1%	78.4%	77.7%
		Adjusted Residual	-3.1	3.1	
Total		Count	43	1219	1262
		% within SA Status	3.4%	96.6%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Pairwise Comparisons: Non-Participants and Applicants

SA Status * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
SA Status	Non-Participant	Count	3576	2912	6488
		% within SA Status	55.1%	44.9%	100.0%
		% within 4 Year Grad	96.8%	94.8%	95.8%
		Adjusted Residual	4.1	-4.1	
	Applicant	Count	120	161	281
		% within SA Status	42.7%	57.3%	100.0%
		% within 4 Year Grad	3.2%	5.2%	4.2%
		Adjusted Residual	-4.1	4.1	
Total		Count	3696	3073	6769
		% within SA Status	54.6%	45.4%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

SA Status * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
SA Status	Non-Participant	Count	1988	4500	6488
		% within SA Status	30.6%	69.4%	100.0%
		% within 5 Year Grad	97.6%	95.1%	95.8%
		Adjusted Residual	4.9	-4.9	
	Applicant	Count	48	233	281
		% within SA Status	17.1%	82.9%	100.0%
		% within 5 Year Grad	2.4%	4.9%	4.2%
		Adjusted Residual	-4.9	4.9	
Total		Count	2036	4733	6769
		% within SA Status	30.1%	69.9%	100.0%
		% within 5 Year Grad	100.0%	100.0%	100.0%

SA Status * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	Yes	Total
SA Status	Non-Participant	Count	1667	4821	6488
		% within SA Status	25.7%	74.3%	100.0%
		% within 6 Year Grad	98.3%	95.0%	95.8%
		Adjusted Residual	6.0	-6.0	
	Applicant	Count	28	253	281
		% within SA Status	10.0%	90.0%	100.0%
		% within 6 Year Grad	1.7%	5.0%	4.2%
		Adjusted Residual	-6.0	6.0	
Total		Count	1695	5074	6769
		% within SA Status	25.0%	75.0%	100.0%
		% within 6 Year Grad	100.0%	100.0%	100.0%

SA Status * Graduated (8 Years) Crosstabulation

			Graduated		
			No	Yes	Total
SA Status	Non-Participant	Count	1477	5011	6488
		% within SA Status	22.8%	77.2%	100.0%
		% within Graduated	98.8%	95.0%	95.8%
		Adjusted Residual	6.5	-6.5	
	Applicant	Count	18	263	281
		% within SA Status	6.4%	93.6%	100.0%
		% within Graduated	1.2%	5.0%	4.2%
		Adjusted Residual	-6.5	6.5	
Total		Count	1495	5274	6769
		% within SA Status	22.1%	77.9%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Appendix G

Crosstabulations: Degree Completion Pairwise Comparisons by Program Type

Pairwise Comparisons: Faculty-Led and Affiliated Participants

Program Type * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
Program Type	Faculty-Led	Count	208	238	446
		% within Program Type	46.6%	53.4%	100.0%
		% within 4 Year Grad	62.5%	49.4%	54.7%
		Adjusted Residual	3.7	-3.7	
	Affiliated	Count	125	244	369
		% within Program Type	33.9%	66.1%	100.0%
		% within 4 Year Grad	37.5%	50.6%	45.3%
		Adjusted Residual	-3.7	3.7	
Total		Count	333	482	815
		% within Program Type	40.9%	59.1%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

Program Type * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	No	Total
Program Type	Faculty-Led	Count	53	393	446
		% within Program Type	11.9%	88.1%	100.0%
		% within 5 Year Grad	65.4%	53.5%	54.7%
		Adjusted Residual	2.0	-2.0	
	Affiliated	Count	28	341	369
		% within Program Type	7.6%	92.4%	100.0%
		% within 5 Year Grad	34.6%	46.5%	45.3%
		Adjusted Residual	-2.0	2.0	
Total		Count		734	815
		% within Program Type		90.1%	100.0%
		% within 5 Year Grad		100.0%	100.0%

Pairwise Comparisons: Faculty-Led and Exchange Participants

Program Type * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
Program Type	Faculty-Led	Count	208	238	446
		% within Program Type	46.6%	53.4%	100.0%
		% within 4 Year Grad	77.3%	69.4%	72.9%
		Adjusted Residual	2.2	-2.2	
	Exchange	Count	61	105	166
		% within Program Type	36.7%	63.3%	100.0%
		% within 4 Year Grad	22.7%	30.6%	27.1%
		Adjusted Residual	-2.2	2.2	
Total		Count	269	343	612
		% within Program Type	44.0%	56.0%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

Appendix H

Crosstabulations: Degree Completion Pairwise Comparisons by Program Length

Pairwise Comparisons: Mid-Length and Long-Term Participants

Program Length * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
Program Length	Mid-Length	Count	147	232	379
		% within Program Length	38.8%	61.2%	100.0%
		% within 4 Year Grad	85.0%	94.3%	90.5%
		Adjusted Residual	-3.2	3.2	
	Long-Term	Count	26	14	40
		% within Program Length	65.0%	35.0%	100.0%
		% within 4 Year Grad	15.0%	5.7%	9.5%
		Adjusted Residual	3.2	-3.2	
Total		Count	173	246	419
		% within Program Length	41.3%	58.7%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

Program Length * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
Program Length	Mid-Length	Count	37	342	379
		% within Program Length	9.8%	90.2%	100.0%
		% within 5 Year Grad	77.1%	92.2%	90.5%
		Adjusted Residual	-3.3	3.3	
	Long-Term	Count	11	29	40
		% within Program Length	27.5%	72.5%	100.0%
		% within 5 Year Grad	22.9%	7.8%	9.5%
		Adjusted Residual	3.3	-3.3	
Total		Count		371	419
		% within Program Length		88.5%	100.0%
		% within 5 Year Grad		100.0%	100.0%

Program Length * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	Yes	Total
Program Length	Mid-Length	Count	12	367	379
		% within Program Length	3.2%	96.8%	100.0%
		% within 6 Year Grad	70.6%	91.3%	90.5%
		Adjusted Residual	-2.8	2.8	
	Long-Term	Count	5	35	40
		% within Program Length	12.5%	87.5%	100.0%
		% within 6 Year Grad	29.4%	8.7%	9.5%
		Adjusted Residual	2.8	-2.8	
Total		Count		402	419
		% within Program Length		95.9%	100.0%
		% within 6 Year Grad		100.0%	100.0%

Program Length * Graduated (8 Years) Crosstabulation

			Graduated		
			No	Yes	Total
Program Length	Mid-Length	Count	8	371	379
		% within Program Length	2.1%	97.9%	100.0%
		% within Graduated	72.7%	90.9%	90.5%
		Adjusted Residual	-2.0	2.0	
	Long-Term	Count	3	37	40
		% within Program Length	7.5%	92.5%	100.0%
		% within Graduated	27.3%	9.1%	9.5%
		Adjusted Residual	2.0	-2.0	
Total		Count	11	408	419
		% within Program Length	2.6%	97.4%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Pairwise Comparisons: Mid-Length and Long-Term Participants

Program Length * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
Program Length	Short-Term	Count	221	341	562
		% within Program Length	39.3%	60.7%	100.0%
		% within 4 Year Grad	89.5%	96.1%	93.4%
		Adjusted Residual	-3.2	3.2	
	Long-Term	Count	26	14	40
		% within Program Length	65.0%	35.0%	100.0%
		% within 4 Year Grad	10.5%	3.9%	6.6%
		Adjusted Residual	3.2	-3.2	
Total		Count		355	602
		% within Program Length		59.0%	100.0%
		% within 4 Year Grad		100.0%	100.0%

Program Length * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
Program Length	Short-Term	Count	46	516	562
		% within Program Length	8.2%	91.8%	100.0%
		% within 5 Year Grad	80.7%	94.7%	93.4%
		Adjusted Residual	-4.0	4.0	
	Long-Term	Count	11	29	40
		% within Program Length	27.5%	72.5%	100.0%
		% within 5 Year Grad	19.3%	5.3%	6.6%
		Adjusted Residual	4.0	-4.0	
Total		Count		545	602
		% within Program Length		90.5%	100.0%
		% within 5 Year Grad		100.0%	100.0%

Program Length * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	Yes	Total
Program Length	Short-Term	Count	26	536	562
		% within Program Length	4.6%	95.4%	100.0%
		% within 6 Year Grad	83.9%	93.9%	93.4%
		Adjusted Residual	-2.2	2.2	
	Long-Term	Count	5	35	40
		% within Program Length	12.5%	87.5%	100.0%
		% within 6 Year Grad	16.1%	6.1%	6.6%
		Adjusted Residual	2.2	-2.2	
Total		Count		571	602
		% within Program Length		94.9%	100.0%
		% within 6 Year Grad		100.0%	100.0%

Appendix I

Crosstabulations: Degree Completion Pairwise Comparisons by Classification at Participation

Pairwise Comparisons: Junior and Underclassman Participants

Classification at Participation * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
Classification	Underclassmen	Count	40	46	86
		% within Classification	46.5%	53.5%	100.0%
		% within 4 Year Grad	26.8%	17.2%	20.7%
		Adjusted Residual	2.3	-2.3	
	Junior	Count	109	221	330
		% within Classification	33.0%	67.0%	100.0%
		% within 4 Year Grad	73.2%	82.8%	79.3%
		Adjusted Residual	-2.3	2.3	
Total		Count	149	267	416
		% within Classification	35.8%	64.2%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

Classification at Participation * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
Classification	Underclassmen	Count	15	71	86
		% within Classification	17.4%	82.6%	100.0%
		% within 5 Year Grad	38.5%	18.8%	20.7%
		Adjusted Residual	2.9	-2.9	
	Junior	Count	24	306	330
		% within Classification	7.3%	92.7%	100.0%
		% within 5 Year Grad	61.5%	81.2%	79.3%
		Adjusted Residual	-2.9	2.9	
Total		Count	39	377	416
		% within Classification	9.4%	90.6%	100.0%
		% within 5 Year Grad	100.0%	100.0%	100.0%

Classification at Participation * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	Yes	Total
Classification	Underclassmen	Count	11	75	86
		% within Classification	12.8%	87.2%	100.0%
		% within 6 Year Grad	50.0%	19.0%	20.7%
		Adjusted Residual	3.5	-3.5	
	Junior	Count	11	319	330
		% within Classification	3.3%	96.7%	100.0%
		% within 6 Year Grad	50.0%	81.0%	79.3%
		Adjusted Residual	-3.5	3.5	
Total		Count	22	394	416
		% within Classification	5.3%	94.7%	100.0%
		% within 6 Year Grad	100.0%	100.0%	100.0%

Classification at Participation * Graduated (8 Years) Crosstabulation

			Graduated		
			No	Yes	Total
Classification	Underclassmen	Count	8	78	86
		% within Classification	9.3%	90.7%	100.0%
		% within Graduated	53.3%	19.5%	20.7%
		Adjusted Residual	3.2	-3.2	
	Junior	Count	7	323	330
		% within Classification	2.1%	97.9%	100.0%
		% within Graduated	46.7%	80.5%	79.3%
		Adjusted Residual	-3.2	3.2	
Total		Count	15	401	416
		% within Classification	3.6%	96.4%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Pairwise Comparisons: Underclassman and Senior Participants

Classification at Participation * 5 Year Grad Crosstabulation

			5 Year Grad		
			No	Yes	Total
Classification	Underclassmen	Count	15	71	86
		% within Classification	17.4%	82.6%	100.0%
		% within 5 Year Grad	21.4%	12.2%	13.2%
		Adjusted Residual	2.1	-2.1	
	Senior	Count	55	510	565
		% within Classification	9.7%	90.3%	100.0%
		% within 5 Year Grad	78.6%	87.8%	86.8%
		Adjusted Residual	-2.1	2.1	
Total		Count	70	581	651
		% within Classification	10.8%	89.2%	100.0%
		% within 5 Year Grad	100.0%	100.0%	100.0%

Classification at Participation * 6 Year Grad Crosstabulation

			6 Year Grad		
			No	Yes	Total
Classification	Underclassmen	Count	11	75	86
		% within Classification	12.8%	87.2%	100.0%
		% within 6 Year Grad	33.3%	12.1%	13.2%
		Adjusted Residual	3.5	-3.5	
	Senior	Count	22	543	565
		% within Classification	3.9%	96.1%	100.0%
		% within 6 Year Grad	66.7%	87.9%	86.8%
		Adjusted Residual	-3.5	3.5	
Total		Count	33	618	651
		% within Classification	5.1%	94.9%	100.0%
		% within 6 Year Grad	100.0%	100.0%	100.0%

Classification at Participation * Graduated (8 Year) Crosstabulation

			Graduated		
			No	Yes	Total
Classification	Underclassmen	Count	8	78	86
		% within Classification	9.3%	90.7%	100.0%
		% within Graduated	44.4%	12.3%	13.2%
		Adjusted Residual	4.0	-4.0	
	Senior	Count	10	555	565
		% within Classification	1.8%	98.2%	100.0%
		% within Graduated	55.6%	87.7%	86.8%
		Adjusted Residual	-4.0	4.0	
Total		Count	18	633	651
		% within Classification	2.8%	97.2%	100.0%
		% within Graduated	100.0%	100.0%	100.0%

Pairwise Comparisons: Junior and Senior Participants

Classification at Participation * 4 Year Grad Crosstabulation

			4 Year Grad		
			No	Yes	Total
Classification	Junior	Count	109	221	330
		% within Classification	33.0%	67.0%	100.0%
		% within 4 Year Grad	30.8%	40.9%	36.9%
		Adjusted Residual	-3.0	3.0	
	Senior	Count	245	320	565
		% within Classification	43.4%	56.6%	100.0%
		% within 4 Year Grad	69.2%	59.1%	63.1%
		Adjusted Residual	3.0	-3.0	
Total		Count	354	541	895
		% within Classification	39.6%	60.4%	100.0%
		% within 4 Year Grad	100.0%	100.0%	100.0%

Appendix J

Crosstabulations: Time-to-Degree Pairwise Comparisons by Program Type

Program Type * Grad Year Crosstabulation

			Grad Year				
			Less than 4 Years	5 Years	6 Years	More than 6 Years	Total
Program Type	Faculty-Led	Count	188	175	53	19	435
		% within Program Type	43.2%	40.2%	12.2%	4.4%	100.0%
		% within Grad Year	66.9%	75.8%	85.5%	90.5%	73.1%
		Adjusted Residual	-3.2	1.2	2.3	1.8	
	Exchange	Count	93	56	9	2	160
		% within Program Type	58.1%	35.0%	5.6%	1.3%	100.0%
		% within Grad Year	33.1%	24.2%	14.5%	9.5%	26.9%
		Adjusted Residual	3.2	-1.2	-2.3	-1.8	
Total		Count	281	231	62	21	595
		% within Program Type	47.2%	38.8%	10.4%	3.5%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%

Program Type * Grad Year Crosstabulation

			Grad Year				
			Less than 4 Years	5 Years	6 Years	More than 6 Years	Total
Program Type	Faculty-Led	Count	188	175	53	19	435
		% within Program Type	43.2%	40.2%	12.2%	4.4%	100.0%
		% within Grad Year	49.0%	56.3%	70.7%	73.1%	54.6%
		Adjusted Residual	-3.1	.7	2.9	1.9	
	Exchange	Count	196	136	22	7	361
		% within Program Type	54.3%	37.7%	6.1%	1.9%	100.0%
		% within Grad Year	51.0%	43.7%	29.3%	26.9%	45.4%
		Adjusted Residual	3.1	-.7	-2.9	-1.9	
Total		Count	384	311	75	26	796
		% within Program Type	48.2%	39.1%	9.4%	3.3%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix K

Crosstabulations: Time-to-Degree Pairwise Comparisons by Program Length

Program Length * Grad Year Crosstabulation

			Grad Year				
			Less than 4 Years	5 Years	6 Years	More than 6 Years	Total
Program Length	Mid-Length	Count	191	138	36	6	371
		% within Program Length	51.5%	37.2%	9.7%	1.6%	100.0%
		% within Grad Year	95.0%	88.5%	90.0%	54.5%	90.9%
		Adjusted Residual	2.8	-1.4	-.2	-4.3	
	Long-Term	Count	10	18	4	5	37
		% within Program Length	27.0%	48.6%	10.8%	13.5%	100.0%
		% within Grad Year	5.0%	11.5%	10.0%	45.5%	9.1%
		Adjusted Residual	-2.8	1.4	.2	4.3	
Total		Count	201	156	40	11	408
		% within Program Length	49.3%	38.2%	9.8%	2.7%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%

Program Length * Grad Year Crosstabulation

			Grad Year				
			Less than 4 Years	5 Years	6 Years	More than 6 Years	Total
Program Length	Short-Term	Count	276	211	44	17	548
		% within Program Length	50.4%	38.5%	8.0%	3.1%	100.0%
		% within Grad Year	96.5%	92.1%	91.7%	77.3%	93.7%
		Adjusted Residual	2.7	-1.2	-.6	-3.2	
	Long-Term	Count	10	18	4	5	37
		% within Program Length	27.0%	48.6%	10.8%	13.5%	100.0%
		% within Grad Year	3.5%	7.9%	8.3%	22.7%	6.3%
		Adjusted Residual	-2.7	1.2	.6	3.2	
Total		Count	286	229	48	22	585
		% within Program Length	48.9%	39.1%	8.2%	3.8%	100.0%
		% within Grad Year	100.0%	100.0%	100.0%	100.0%	100.0%