

2016

Examining the effects of living learning programs on first year success of undergraduates

<https://hdl.handle.net/2144/17108>

Boston University

BOSTON UNIVERSITY
SCHOOL OF EDUCATION

Dissertation

**EXAMINING THE EFFECTS OF LIVING LEARNING PROGRAMS
ON FIRST YEAR SUCCESS OF UNDERGRADUATES**

by

LINETTE A. DECARIE

B.A., University of Miami, 1995
M.A., Boston University, 1996
M.B.A., Boston University, 2002

Submitted in partial fulfillment of the
requirements for the degree of
Doctor of Education

2016

© 2016 by
Linette A. Decarie
All rights reserved

Approved by

First Reader

Mary H. Shann, Ph.D.
Professor of Education

Second Reader

Joseph M. Cronin, Ed.D.
Senior Lecturer of Educational Leadership & Policy Studies

Third Reader

Laurie A. Pohl, Ph.D.
Vice President for Enrollment and Student Affairs

DEDICATION

For my Dad.

You may not have finished this journey with me,
but you carried me through nonetheless.

Thank you for everything.

ACKNOWLEDGMENTS

I would like to express my gratitude to my advisor and committee chair, Mary Shann, and to committee members Laurie Pohl and Joseph Cronin. By sharing your time, expertise, attention to detail, and encouragement, I was able to complete a long-held goal and I deeply appreciate it.

There are many at Boston University who contributed time, resources, and encouragement to me in this process. My participation in the doctoral program was made possible by the professional and personal support of Melanie Madaio-O'Brien and Derek Howe. I will always appreciate everything you've done for me. In addition, thank you to David Zamojski, Elizabeth Loizeaux, and Gregg Harbaugh for the access, expertise, and time that you provided on my behalf. Finally, I would like to thank the staff of BU's Institutional Research. This process has confirmed that you are the best team with which I could ever hope to work.

My deep appreciation to Lisa Frank, Cary Gemp, and Jessica Sharkness for your editorial, organizational, and statistical assistance. I owe you much wine.

Finally, these chapters are the culmination of the unwavering support I receive from my mom, brother and sister-in-law, and the rest of my wonderful family and friends. Thanks to all of you, I finally made it. And to my nephew, Ian: I am sorry we can no longer commiserate about our homework, but I hope this shows you that more things are possible from a computer than Minecraft.

**EXAMINING THE EFFECTS OF LIVING LEARNING PROGRAMS
ON FIRST YEAR SUCCESS OF UNDERGRADUATES**

LINETTE A. DECARIE

Boston University School of Education, 2016

Major Professor: Mary H. Shann, Ph.D., Professor of Education

ABSTRACT

This dissertation examines the relationship between living learning programs (LLPs) and student success at Boston University, a large, private research institution. The focus of this research was to better understand the distinctions between different types of living learning program formats (honors, academic, and special interest) and traditional housing in terms of the types of students they attract and what relationship they have with academic performance, retention, and student perception. Using the conceptual frameworks provided by Astin's "I-E-O" model and Tinto's longitudinal model of student departure, a mixed method design employing both quantitative (binary logistic and linear regression) and qualitative (interviews with LLP program faculty, staff, and student advisors) components was used. Results indicate that there were significant differences in student characteristics, academic performance, and perception between LLP participants and students in traditional housing. LLP participation was found to be positively related to retention, academic success and a student's evaluation of the overall environment of the University. Academic LLP participation was linked to increased retention and first year cumulative GPA, while honors LLP

participants were more inclined to rate their overall experience as excellent. These findings demonstrate that LLP format and composition are important in evaluating how these programs impact first year students. While research was limited to the students enrolled at a single institution, this study provides information about LLPs with varying level of academic integration, which can be useful to administrators looking to establish or review LLP programs on their own campus.

TABLE OF CONTENTS

DEDICATION	iv
ACKNOWLEDGMENTS	v
ABSTRACT	vi
TABLE OF CONTENTS	viii
LIST OF TABLES	xii
LIST OF FIGURES	xvii
LIST OF ABBREVIATIONS	xviii
GLOSSARY	xix
CHAPTER 1 - INTRODUCTION.....	1
Statement of Problem	2
Research Objectives.....	3
Purpose of Study	4
Research Questions and Hypotheses.....	4
Conceptual Framework.....	6
Significance of the Study	7
Scope and Delimitations	9
Limitations.....	9
Chapter Summary.....	11

CHAPTER 2 – LITERATURE REVIEW	12
Defining Success in the First Year	12
Academic Success	13
Retention	14
Significance of Retention and Academic Achievement	15
Conceptual Models of Academic Achievement and Retention.....	19
Astin’s Concept of Involvement and the I-E-O Model	19
Tinto’s Model of Student Integration and Departure	21
Intersection of Conceptual Models	24
Drivers of Academic Achievement and Retention	27
Demographic Variables	27
Academic Preparation	33
Financial Resources	34
Commitment and Integration	38
Institutional Experiences.....	40
Development of Living Learning Communities.....	47
Learning Communities	47
Living Learning Programs and Student Success.....	49
Limitations of Existing Research	52
CHAPTER 3 – RESEARCH METHODOLOGY	54
Research Design	55
Research Setting	57

Boston University	57
First Year Retention	58
Housing and Living-Learning Programs	59
Data Collection Procedures and Instrumentation.....	62
Entering Student Dataset	62
National Survey of Student Engagement Dataset	64
Qualitative Data Sample.....	68
Key Variables.....	70
Variable Selection	70
Dependent Variables (Outcomes)	71
Independent Variables	72
Data Analysis	76
Quantitative Analysis.....	76
Qualitative Analysis	78
CHAPTER 4 - RESULTS.....	79
Sample Population and Demographic Profile.....	79
Data Analysis	81
Analysis of Research Questions	83
Research Question 1	84
Research Question 2.....	125
Research Question 3.....	169
Research Question 4.....	180

CHAPTER 5 – ANALYSIS AND RECOMMENDATIONS	221
LLPs and Student Success	223
Type of LLP.....	226
Choice of Participation	229
Academic Content	232
LLP and the Conceptual Models	235
Limitations.....	238
Implications and Recommendations for Professional Practice.....	239
Recommendations for Future Research	243
Conclusion	245
APPENDIX	247
Appendix 1: Astin’s “I-E-O” Model (1993)	248
Appendix 2: Tinto’s Model of Student Departure (1993)	249
Appendix 3: Overlap between Astin’s and Tinto’s Models	250
Appendix 4: AY 2013-2014 BU Specialty Community Residences and Requirements.....	251
Appendix 5: Qualitative Research Question Guide and Informed Consent..	254
Appendix 6: Correlation Matrix.....	257
BIBLIOGRAPHY.....	254
CURRICULUM VITAE	275

LIST OF TABLES

Table 3.1: Distribution of First-Time, Full Time Undergraduates by Semester of Entry – All Records.....	63
Table 3.2: Record Counts of First-Time, Full Time Undergraduates by Semester of Entry	64
Table 3.3: Distribution of Interview Participants by Job Function and LLP Type.	68
Table 4.1: Frequency and Percent of Undergraduates by Gender and Race/Ethnicity.....	80
Table 4.2: Frequency and Percent of LLP and Regular Housing Participants....	82
Table 4.3: Frequency and Percent of LLP Participants by LLP Type.....	84
Table 4.4: LLP Status by Student Gender.....	87
Table 4.5: LLP Status by Race, Ethnicity and Citizenship.....	90
Table 4.6: LLP Status by Citizenship.....	92
Table 4.7: LLP Status by Race/Ethnicity of Domestic Students.....	95
Table 4.8: T-test Results for Academic Preparation Variables Comparing Students Participating in LLPs with Those Participating in Traditional Housing.....	96
Table 4.9: One-way ANOVA of SAT – Combined and High School GPA by Type of LLP.....	97
Table 4.10: T-test Results for Academic Preparation Variables Comparing Students Receiving Choice of LLP Compared to Those Assigned to an LLP.....	99

Table 4.11: Chi-square Results for LLP Status by Indicator of Unmet Financial Need for Students Who Applied for Financial Aid.....	103
Table 4.12: Chi-square Results for LLP Status by Receipt of Need-Based Aid for Students Who Applied for Financial Aid.....	105
Table 4.13: Chi-square Results for LLP Status by Pell Status for Students Who Applied for Financial Aid.....	106
Table 4.14: Chi-square Results for LLP Status by Merit Aid Status.....	109
Table 4.15: Chi-square Results for LLP Status by Loan Status for Students Who Applied for Financial Aid.....	111
Table 4.16: Chi-square Results for Retention by LLP Status.....	113
Table 4.17: T-test Results for Average First Year GPA Comparing Students by LLP Participation and Choice	115
Table 4.18: One-way ANOVA Results of 1 st Year GPA by Type of LLP.....	116
Table 4.19: Binary Logistic Regression Analysis of Retention by Gender, Race/ Ethnicity, Academic and Financial Resources, and LLP Participation	119
Table 4.20: Linear Regression Analysis of First Year GPA by Gender, Race/ Ethnicity, Academic and Financial Resources, and LLP Participation and Choice.....	121
Table 4.21: Chi-square Results for Undeclared Major in Second Semester Status by LLP Status.....	127
Table 4.22: T-test Results for the Average Difference Between Credit Hours Attempted and Earned by LLP Participation and Choice.....	129

Table 4.23: One-way ANOVA Comparing Average Difference Credit Hours Attempted vs. Earned by Type of LLP.....	129
Table 4.24: Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and First Year Commitment	131
Table 4.25: Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation, and First Year Commitment and LLP Participation.....	135
Table 4.26: Chi-square Results for Categorical Variables by Entering Cohort..	140
Table 4.27: T-test Results for the Average Difference between Academic Preparation and First Year Performance Variables by Entering Cohort.....	142
Table 4.28: Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, and LLP Participation for Entering Class of 2013	144
Table 4.29: Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation, and First Year Commitment and Participation Variables for the Entering Class of 2013.....	147
Table 4.30: Chi-square Results for Categorical Variables by NSSE Participation.....	151
Table 4.31: T-test Results for the Average Difference between Academic Preparation and First Year Performance Variables by NSSE Participation	153

Table 4.32: Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, and LLP Participation for NSSE Participants	155
Table 4.33: Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation, and First Year Commitment and Participation Variables for NSSE Participants	157
Table 4.34: T-test Results for Quality of Interaction Indicators by LLP Participation	161
Table 4.35: ANOVA Results for Quality of Interaction Indicators by LLP Type..	161
Table 4.36: Chi-square Results for Evaluation of Overall Educational Experience by LLP Participation.....	163
Table 4.37: Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, and LLP Participation, and Perception Indicators	166
Table 4.38: Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables.....	167
Table 4.39: Linear Regression Analysis of Quality of Interaction with Students by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables.....	171
Table 4.40: Linear Regression Analysis of Quality of Interaction with Faculty by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables.....	173

Table 4.41: Binary Logistic Regression Analysis of Evaluation of Institution as Excellent by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables..... 176

Table 4.42: Binary Logistic Regression Analysis of Evaluation of Institution as Good or Excellent by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables..... 177

LIST OF FIGURES

Figure 2.1: Completion Rates for Tertiary Education among Member Countries of the OECD.....	18
Figure 3.1: A Comparison of First Year Retention Rates	59
Figure 4.1: Boston University's Charles River Campus	207

LIST OF ABBREVIATIONS

ANOVA.....	Analysis of Variance
ARS.....	Adjective Rating Scale
BU.....	Boston University
CIRP.....	Cooperative Institutional Research Program
CSEQ.....	College Student Experiences Questionnaire
FAFSA.....	Free Application for Federal Student Aid
FIG.....	Freshman Interest Group
GPA.....	Grade Point Average
IIE.....	Institute of International Education
IPEDS.....	Integrated Postsecondary Education Data System
IRB.....	Institutional Review Board
KHC.....	Kilachand Honors College
LLP.....	Living Learning Program
NCES.....	National Center for Education Statistics
NEASC.....	New England Association of Schools and Colleges
NSLLP.....	National Survey of Living Learning Programs
NSSE.....	National Survey of Student Engagement
OECD.....	Organisation for Economic Co-operation and Development
RA.....	Resident Assistant
RU/VH.....	Residential University – Very High Research
SES.....	Socioeconomic Status

GLOSSARY

Academic LLP – a grouping of LLPs that have the stated requirement of a specific major or minor to participate. Included are those LLPs devoted to a specific school or college, or to particular academic programs or major.

Academic Success – operationalized in this study as first year GPA, May (1923) defined academic success as “intellectual achievement and assume that it is measured by college grades or marks.”

Brownstone – the label commonly applied to the row-house style small dormitories available to undergraduates, and used by several LLPs, on BU’s Bay State Road.

Honors LLP – LLPs dedicated to participants in the Kilachand Honors College (KHC) or winners of the Trustee Merit Scholarship.

Retention – Continuation of a student into their second year of enrollment. Specifically, the federal definition for freshmen-to-sophomore retention was employed in this study, which measures the rate of persistence in first-time, full-time degree-seeking students from the entering fall semester to the following fall semester (NCES, 2015).

Living Learning Program (LLP) – defined by Inkelas (2008) as “programs in which undergraduate students live together in a discrete portion of a residence hall (or the entire hall) and participate in academic and/or extra-curricular programming designed especially for them.”

Loan Aid – Aid that must be repaid by the borrower to the lending institution (NCES, 2015). In this study, loan aid borrowed through the institution or federal sources was considered, while aid from private sources or to parents was not.

Merit Aid – Grant aid that is awarded based on a student's skill or ability, and does not need to be repaid to the institution

Need-Based Grant Aid – Grant aid that is awarded to a student based on demonstrated financial need, and is not required to be repaid.

Pell Grant – A federal program that provides educational grant assistance to undergraduate students who have demonstrated need (NCES, 2015). Receipt of Pell aid has been used as an indicator of lower socioeconomic status (SES).

Special Interest LLP – a grouping of LLPs that have a stated common interest or activity to connect students, such as diversity, community service, writing, wellness or music.

Traditional Housing – on-campus dormitory or apartment housing provided by the institution to undergraduates without additional requirement beyond enrollment.

CHAPTER 1

Introduction

Student success in higher education has come under intense scrutiny, as the value proposition has been called into question by students, alumni, state and federal sources, and other constituents. With recent surveys indicating that only 50% of alumni believe that higher education is worth the cost (Gallup-Purdue, 2015), postsecondary institutions are faced with the task of creating a value-added experience that promotes undergraduate academic achievement and degree completion. This effort is complicated at institutions with larger undergraduate populations, where a diverse mix of student backgrounds and higher student-faculty ratios can challenge community-building efforts.

Student success in higher education is complicated, with many important, and sometimes competing drivers. Models of student success postulate that the institution's academic and social environment are as important to a student's academic achievement and commitment to complete his or her degree as the preparation and resources he or she has at the time of entry (Astin, 1993; Tinto, 1993). Therefore, creating opportunities for students to succeed academically while successfully integrating them into the social environment is a challenge for administrators focused on retention within the institution.

Learning communities have been proposed as an alternative to traditional curriculum development, which is often centered on faculty expertise as opposed to optimizing student learning (Tinto, 2005b). These programs are designed to combine the academic and social aspects of higher education into an experience that increases the likelihood of interaction with faculty and peers, creating more opportunity for integration into the college environment (Hoffman, Richmond, Morrow, and Salomone, 2002). For large universities, these programs help to create smaller communities within the larger one, building purposeful opportunities for connecting and supporting students. While many potential formats of learning communities exist, understanding how these programs function at different types of universities, as well as the key attributes that promote student success are important to developing effective programs.

Statement of Problem

Student success has become a focus of discussion in higher education, linked with concerns of students and their families over financial aid and accessibility, rising tuition costs, and the perceived value of an advanced degree. Responding to these concerns, institutions have looked to research on undergraduate retention and academic achievement to inform the implementation of programs and interventions designed to increase a student's likelihood to remain enrolled and excel at their primary institution. One such intervention is the Living Learning

Program (LLP), a residential-based program that is designed to better integrate a student's academic and social life.

Boston University (BU) has an established system of over 30 specialty community residences that range in level of academic content, from informal connections based on a common interest, to participation in a shared academic program, to coordinated course enrollment in BU's Kilachand Honors College (KHC). Comparing these various program formats, questions emerge concerning the effectiveness of the programs in promoting academic success and retention among first year student residents.

Research Objectives

Research on LLPs is a developing field because of the breadth of programs by focus and organization. Because of the relatively small size of these programs in relation to the general population of undergraduates, LLP participation is often treated as a single variable in analysis, potentially masking distinctions among different program formats (Inkelas and Soldner, 2011). In addition, while much research has been done on LLPs with dedicated course content, many LLPs do not include courses specific to their residents (Brower and Inkelas, 2010).

Since the majority of programs studied in current research are well established or have demand that exceed the available space in the program, gaps in research exist

in understanding how LLP placement might interact with overall outcomes of these students compared to those in traditional dormitory housing. Finally, as demographic, economic, and political factors continue to influence the mix of students accessing higher education, additional research on student retention and achievement is necessary to understand and maintain the efficacy of interventions on the changing incoming student population.

Purpose of Study

The purpose of this study was to explore how differing LLP formats, in relation to residing in a traditional dormitory, are related to student retention and academic success. Using institutional data on entering BU freshman along with student perceptions collected via the National Survey of Student Engagement (NSSE), differences between residents in three types of LLPs, along with significant relationships between LLP participation and student success were studied. Interviews with LLP advisors and resident assistants (RAs) provided additional perspectives on the effectiveness of these programs.

Research Questions and Hypotheses

The research detailed in this study was designed to add to the body of research on student success and the efficacy of LLPs by examining the drivers of retention

and academic achievement among freshmen who participated in LLPs compared to those in traditional housing. Specific research questions are as follows:

- Do LLPs attract students who are better prepared academically? Do they differ from students in the traditional housing population in terms of demographics or other background characteristics?
- Is LLP participation associated with increased retention or academic achievement in first year students?
- Do different LLP formats vary in terms of the relationship of the format type to levels of first year success of residents?
- Do students who opt in to LLPs prior to their freshman year differ, in terms of rates of retention, academic achievement, and level of satisfaction, from students who are placed in LLP housing, or those in traditional housing?
- Is LLP participation associated with increased levels of satisfaction and commitment? How do differences in satisfaction and commitment relate to retention and academic success?
- How do faculty and staff advisors and resident assistants view the effect of LLPs on student success?

Conceptual Framework

Two models were used to provide the conceptual framework of this study: Astin's Inputs-Environment-Outputs (I-E-O) Model and Tinto's Model of Student Departure. These models are compatible in that they both incorporate the idea that a student's background, along with his or her experiences at the institution, shape commitment, integration, and ultimately, student success.

Astin's I-E-O Model is based on the premise that inputs (I), or characteristics of the student upon entry, plus environment (E), referring to aspects of the institutions such as programs, faculty, peers, and academics, yield outcomes (O), the characteristics of the student after exposure to the environment (Astin, 1993). This work highlights the importance of individual levels of involvement, defined as "the time and effort expended by the student in activities that relate directly to the institution and its programs," in a student's academic success and the retention decision (Astin, 1977). Additional research underscores that these types of activities serve to minimize the negative effects of "forms of involvement that either isolate the student from peers or remove the student physically from the campus" (Astin, 1993).

Similar to Astin's model, Tinto (1993) developed a model of the student retention decision that incorporates the combined effect of characteristics brought with the student upon enrollment, such as academic preparation or economic resources, along with the student's academic goals and level of commitment to the

institution. These characteristics affect the student's interactions with that institution's social and academic systems, resulting in constant modification of the student's commitment and goals over time, thereby informing his or her retention decision.

Tinto's model incorporates the idea that factors that affect retention evolve as the student progresses in his or her education. In particular, the first year of college is highlighted as a critical period for retention initiatives. As Tinto (1993) noted, "the incidence of withdrawal is highest during this early stage of the college career. The individual is least integrated into and therefore least committed to the institution and thus most susceptible to the pains and doubts which separation and transition can evoke".

Significance of the Study

The vast body of research developed on student success over the last several decades has framed the issue in terms of a complex interaction of student and institutional inputs and experiences. Administrators look to this research for sources of potential intervention to help improve institutional retention rates. LLPs represent one such intervention that may directly and indirectly improve student retention and academic success.

Reducing attrition and improving student academic achievement not only affects undergraduates, who are the subjects of interest in this dissertation, but also

many constituents in higher education. While students are the obvious beneficiaries of interventions aimed at promoting academic success, organizations providing financial support to the institution, including federal and state governments, accreditors, and tuition-paying families, have all expressed concern for the value of higher education. Thus, examining the interaction between students and the university environment is a key interest to many areas of the institution's administration, as well as educational researchers, who are the primary audiences of this study.

In particular, this study can be of greatest use to academic and student affairs administrators who work to promote initiatives designed to improve the comprehensive college experience. For researchers, this study contributes to the ongoing clarification of the retention equation, providing additional insight into the complex relationship between LLPs and student success in the first year. In addition, variations in student success have been noted between public and private institutions, which have different educational missions (Astin and Oseguera, 2005, 2012). While other studies that delve into the distinctions between LLP types have focused on public institutions (Pike 1999; Inkelas and Weisman, 2003; Stassen, 2003; Pasque and Murphy, 2005), this research represents an opportunity to explore the effectiveness of LLPs at a large, urban, private research institution. It is for these types of programs that the research described here would be most relevant, and for which significant gaps in the literature exist.

Scope and Delimitations

The research detailed in this study was conducted at Boston University, a private institution with an enrollment of over 32,000 students. Data were collected on first-time, full-time undergraduates entering in the fall semesters of 2010 through 2013. Research was limited to those students who lived on-campus and were not dismissed from the institution in their first year due to academic or disciplinary reasons. Though over 15,000 records were examined in this study, the populations of the over 30 individual learning programs were not substantial enough for statistical analysis at the individual program level. Therefore LLPs were organized into three program types based on the purpose and requirements of the LLP: honors LLPs including students in the KHC; academic LLPs which require a specific major or minor to participate; or special interest LLPs which join students together based on a shared interest.

Limitations

While the results of this research will provide greater insight into the role of LLPs in student retention and academic achievement, there are several limitations to the research findings. First, the research detailed in this dissertation is based on students at a single private, four-year institution. Focus of scope to students within a single institution may produce a lack of generalizability in research results, particularly between institution types or those differing in student

demographic composition. These findings, however, add to current research on public institution LLPs to broaden the general understanding of what makes these programs effective. This research is also intended to focus specifically on the freshman cohort, and therefore findings may not be generalizable to other stages of undergraduate education.

In addition, data regarding levels of engagement were pulled from an existing source, the NSSE survey of freshmen in the spring semester of 2014. The NSSE was developed and implemented for reasons other than the purpose of this study, and may provide less than ideal operationalization of the variables being tested in this research. Student participation in LLPs, as well as in the NSSE survey are generally self-selected, and variations participation rates on any of the survey questions may reduce the total population size for analysis. Both of these potential limitations may affect the overall validity of the research results. Limitations also exist in interpretation of the qualitative data collected, including lack of inclusion of all possible themes and errors in interpretation of the information provided.

Due to constraints placed on this study by BU's Institutional Review Board (IRB), LLP participants during AY 2013–2014, when student perception data were collected, could not be interviewed during the school year. Therefore, faculty and staff advisors and student resident assistants who had close contact with both LLP students who were ultimately retained at the institution and those who had

withdrawn were interviewed for their insights on LLP participation and student success.

Chapter Summary

This dissertation is divided into five chapters. Chapter 1 provides the purpose and significance of the study, along with the scope and limitations of the current research. Chapter 2 offers a review of the pertinent research, including: conceptual frameworks developed by Astin (1977,1993) and Tinto (1975, 1993); the drivers of student retention and academic success; current research on living learning programs; and an overview of LLPs on the BU campus. Chapter 3 describes the methodology used in this study, including a summary of the research questions, data collection methods employed, and a description of the quantitative and qualitative methods used to analyze the data necessary to answer these questions. Chapter 4 provides a detailed summary of the results in relation to each of the research questions. Chapter 5 provides discussion and interpretation of these results as they apply to the research questions. In addition, a review of the implications of these findings on current theory is provided in Chapter 5, as well as a summary of the study limitations and recommendations for practitioners and future research.

CHAPTER 2

Literature Review

The following chapter includes relevant research associated with the success of students in their first year of college. In addition to defining related concepts, the overall importance of student success is examined. This review also includes an overview of the models and drivers of retention and academic achievement, and the role of living learning programs in student success. Finally, the limitations of current research on LLPs and academic achievement are outlined.

Defining Success in the First Year

In examining the literature on success in higher education, a variety of terms are often used, sometimes interchangeably. Words such as achievement, performance, retention, engagement, involvement, completion, and integration are used to signify activities that are positively related to a student's success in higher education. To better understand the relationships among these concepts in the research detailed in this literature review, the following definitions were employed in this dissertation.

Academic Success

Success in higher education is a general term that can encompass many different measures, from grades to degree achievement. In an early attempt to identify relevant factors associated with success in college, May (1923) noted: “we shall define academic success as intellectual achievement and assume that it is measured by college grades or marks...The only defense for such assumptions is that these are our only available means of measurement”.

Subsequent studies have continued to define academic success or achievement through the use of a student’s GPA, which, as May noted, provides the most readily available metric of academic performance (Pascarella, 1985; DeBerard, Spielmans, and Julka, 2004; Stater, 2009). Learning outcomes offer another measure of academic success, and have become part of the conversation within curriculum development and accreditation (NEASC, 2011). As these outcomes become more widely measured, additional tools including measurements of skill development and subject mastery are being developed. However, these tools are not yet widely used and understood. Therefore, college GPA still stands as the best metric for comparison of academic achievement across studies and schools, and is considered the standard in the related research and data presented in this study.

Retention

Higher education research has defined retention in multiple ways and with a variety of terms. In her piece on defining retention, Hagedorn (2012) identified four major types by ascending unit of analysis: course, major or discipline, institution, and system. It is the latter two definitions that have been the focus of retention research, viewing retention from different perspectives. Institutional retention, or “the measure of the proportion of students who remain enrolled at the *same* institution from year to year”, is the basis for institutional policies and programs designed promote increased student retention. System retention, however, focuses on student completion regardless of the institution of primary enrollment (Hagedorn, 2012). A student who transfers from one institution to another is considered not retained via institutional retention metrics, but retained under the definition of system retention. This perspective has wider systematic and societal implications. Within these two measures, a variety of terms and measurement definitions have been developed and employed in retention literature including synonyms such as persistence, and opposing measures such as attrition or mortality. In this study and in the associated research discussed, institutional retention is used as the key measure, as the majority of studies of retention are focused on a single or small group of schools. Specifically, the federal definition for freshmen-to-sophomore retention was employed, which measures the rate of persistence in first-time, full-time degree-seeking students from the entering fall semester to the following fall semester (NCES, 2015).

While the ability to track student movement throughout the higher education system is improving through use of data sharing with companies like the National Student Clearinghouse, such measurement is considered out of scope in this research.

Research has shown that a relationship between academic achievement and retention exists, with academic performance being positively related to increased rates of retention (Getzlaf, Sedlacek, Kearney, and Blackwell, 1984; Chen and DeJardins, 2008). In addition, Caison (2005) noted that first semester GPA was influential in differentiating students who transfer to another institution versus those who leave higher education altogether, with transfer having a significantly higher first semester GPA. Both academic achievement and retention are integral to a student's ability to complete a degree though research has shown that they are supported and inhibited in different ways by background, environmental, and student input influences. The literature review presented in this chapter outlines what is currently known about the academic achievement and retention of first year undergraduates.

Significance of Retention and Academic Achievement

Postsecondary education has come under greater scrutiny in recent years, as the value proposition of higher education has been called into question for several

reasons. First, college education has become a significant financial investment for families. According to the College Board, in the decade ending in 2011–2012, “published tuition and fees at public four-year colleges and universities by 31% beyond the rate of inflation over the five years from 2002-03 to 2007-08, and by another 27% between 2007-08 and 20012-13” (Baum and Ma, 2012). In addition, studies have shown that only 45.5% of students completed a degree at their primary institution within a year past the recommended completion time (ACT, 2014). Responding to these issues, institutions continue to explore ways to support the academic success of their students as potential applicants weigh the perceived benefit against the cost of education and federal regulators compare national completion averages with those of other nations.

Though grades, student outcomes, and overall satisfaction with the institution are important metrics of academic success, the most widely reported and compared statistics are institutional retention and graduation rates. Responding to the need for more informed decision making, reporting of freshman-to-sophomore retention and four- and six-year graduation rates are required of all institutions receiving Title IV financial aid funds (Student-Right-to-Know Act, 1990; NCES, 2015) as well as regional higher education accreditation associations such as the New England Association of Schools and Colleges (NEASC) (NEASC, 2011). This data also figures prominently in the methodologies of higher education ranking surveys, such as U.S. News & World Report (Morse, Brooks, and Mason, 2015). Research conducted by Griffith and Rask (2007) on the effect of this

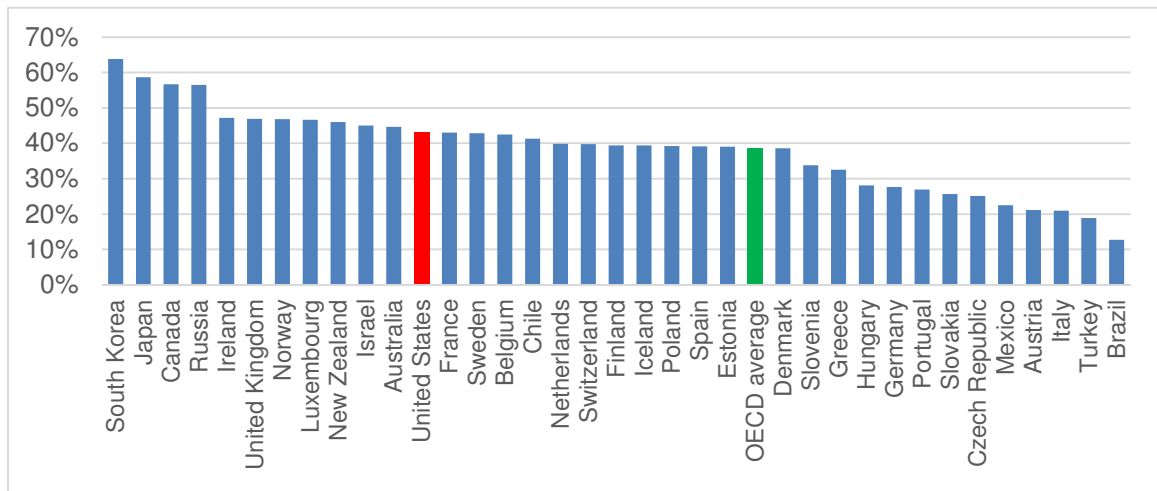
ranking on student choice of college indicates that positive ranking gains increases an applicant's likelihood to attend.

The Obama administration has focused on access and transparency in higher education, citing concerns about the United States' relative position of 12th internationally in tertiary education completion among 25 to 34 year olds (Figure 2.1), as measured by the Organisation for Economic Co-operation and Development (OECD) (OECD, 2013). While the United States was once a leader in degree attainment, in recent decades, other countries have made significant advancement. As noted in an OECD report highlighting 50 years of change in education: "Today, while North American graduation rates have increased, those of some other countries have done so much faster, to the extent that the United States now shows just over the average proportion of tertiary-level graduates at age 25-35" (Gurria, 2011).

In addition, economic concerns are drivers of federal and state interest in retention and subsequent degree attainment. In 2011, the Department of Education noted, "Each four-year college graduate generates, on average, \$5,900 more per year in state, federal, and local tax revenue than each high school graduate. Over a lifetime, each generates, on average, \$177,000 more in tax revenue than those with only a high school degree." To move the U.S. into a better position, the Obama administration articulated a goal of increasing college graduates by 50%, totaling an additional 8 million students by 2020 (Shear,

2010). Methods to attain this goal include increased funding and performance-based incentives aimed at assisting high-need students (The Budget for FY 2012, 2010) and the publication of a “scorecard” website of specific key indicators including retention and graduation rates, college cost, and salary after graduation (Dept. of Education, 2016).

Figure 2.1
 Completion Rates for Tertiary Education among Member Countries of the Organisation for Economic Co-operation and Development (OECD)



From an institutional point of view, low student retention has financial ramifications in that the cost to recruit and educate students does not result in tuition income for the full course of the degree program. These recruitment costs typically exceed the costs to retain a student. As Summerskill (1962) noted, “dollars leave the income side of the budget when students leave college” affecting an institution’s overall operating budget. In preparing for these

expected decreases in admissible students, educational research on retention and academic success is of greater importance as administrators explore methods of gaining financial efficiencies through maintaining enrolled student populations.

Conceptual Models of Academic Achievement and Retention

Focused research on student success gained support in the 1970s, during which several conceptual models were developed that shifted the focus from the institution to the student's personal attributes and experiences. Two widely used models, by Alexander Astin and Vincent Tinto, attempt to incorporate many aspects of the student's experience as drivers of academic success and the retention decision.

Astin's Concept of Involvement and the I-E-O Model

Astin has been a leader in research aimed at understanding the student experience in higher education, laying the groundwork for a greater understanding of student satisfaction, engagement, success, and retention. Applying his background in psychology, Astin (1977) argued that students were not passive recipients of education but active participants in the process. As such, students exhibit behaviors that are shaped by their evolving attitudes, beliefs, and ideas. These behaviors include academic and social involvement as

well as student-faculty interaction. Satisfaction with aspects of the college environment is linked with a student's level of involvement. For example, students exhibit greater satisfaction with student-faculty relations when they have greater interaction with faculty, with similar outcomes for increased involvement and satisfaction with peer interactions and academics (Astin, 1977). Overall, Astin (1993) put forward that student perceptions are important outcomes that are shaped by their interactions with the college environment. These perceptions help shape student involvement.

Astin's (1977) focus on involvement, which he defined as "the time and effort expended by a student in activities that related directly to the institution and its programs," led to the development of the input-environment-output (I-E-O) conceptual model for student development. The basic premise of the I-E-O Model, as seen in Appendix 1, is that inputs (I), or characteristics of the student upon entry, plus environment (E), referring to aspects of the institutions such as programs, faculty, peers, and academics, yield outcomes (O), the characteristics of the student after exposure to the environment (Astin, 1993). In research to support this framework, Astin (1977, 1993) identified clusters of variables that represented different patterns of student involvement that were relevant to student achievement and attrition. For example, tutoring other students, amount of time spent studying, and time spent talking with faculty outside of class are associated with positive academic achievement. Place of residence, involvement with faculty, and academic involvement are associated with student retention.

Astin (1977) postulated that understanding the importance of these factors can lead to interventions that promote academic achievement and retention through increased student involvement. Additional research highlighted that these types of activities serve to minimize the negative effects of “forms of involvement that either isolate the student from peers or remove the student physically from the campus” (Astin, 1993). As Astin (1977) summarized, “efforts to increase student involvement will not only enhance the student’s ability to persist, but will also intensify the impact of the undergraduate experience on the student’s personality, behavior, career progress, and satisfaction”. Astin’s research provides a point of view that responsibility for student achievement is with both the student and the institution, with the most advantageous environment to support success made up of a combination of these two.

Tinto’s Model of Student Integration and Departure

Incorporating similar themes to Astin’s model, Tinto (1975, 1993) developed and subsequently refined a model of the student retention decision that incorporates the combined effect of characteristics brought with student upon enrollment, such as academic preparation or economic background, along with the student’s academic goals and level of commitment to the institution (Appendix 2). These characteristics shape the student’s interactions with that institution’s social and academic systems, resulting in constant modification of the student’s commitment and goals over time, thereby informing his or her retention decision.

Tinto (1975) also further defined the population of study of those students who leave an institution voluntarily and permanently, a distinction not made in earlier research, which allows for more targeted research.

The longitudinal premise of Tinto's model is an important one, incorporating the idea that factors that affect retention evolve over the course of the student's education. In particular, the first year of college is highlighted as a critical period for retention initiatives. Cope and Hannah (1975) indicated that over half of total attrition in private institutions occurred in the freshmen year, which was corroborated by Tinto (1996), who reported that 57% of student departure occurs prior to the start of the second year. As Tinto (1993) noted, "the incidence of withdrawal is highest during this early stage of the college career. The individual is least integrated into and therefore least committed to the institution and thus most susceptible to the pains and doubts which separation and transition evoke". Tinto (1988) later refined this connection by noting that the stress produced by the transition likely affected a student's ability to integrate academically and socially, as opposed to a lack of ability to do so. In addition, Pascarella and Terenzini (2005) noted that the majority of gains made in student learning in skills such as critical thinking, mathematics, science and English are made in the first two years of college.

In testing Tinto's model, Pascarella and Terenzini attempted to test the significance of academic and social integration in the retention decision. Using a

random sample of 500 freshmen at Syracuse University, students were asked to choose from a list of adjectives in response to questions about various aspects of their academic and social lives. The results indicated that variables related to both types of integration were able to differentiate significantly between retained and non-retained students, and that both academic and social integration were equally important in the student's retention decision. The authors also highlighted a strong role of faculty in the academic and social integration processes of students (Terenzini and Pascarella, 1977). Further research on students of different gender and races indicated that academic and social integration were positive and significant to predicting retention in Black and White women and White men, and institutional commitment was significantly related to retention in men and women of both racial groups (Pascarella, 1985).

Tinto's model has become a basis for many research studies on student persistence. As Baird noted in his 2000 piece, "Vincent Tinto's model of student departure is one of the most studied in the field of higher education, and it may be one of the most studied in social science". While it provided a tool with which to further clarify the retention decision, notable limitations have also been identified. For example, Tinto, a professor at Syracuse University, originally conceived this model primarily with large four-year institutions in mind, which has been considered a shortcoming to research targeting specific segments of higher education. As Braxton, Hirschy, and McClendon (2011) noted of the model, "The validity of Tinto's theory continues as an open question in liberal arts colleges

and two-year colleges and across different racial and ethnic groups”. In subsequent research, Tinto (1982) highlighted that the usefulness of his model is in attempting to explain how the institution influences the decision to drop out, and therefore it can help inform how the institution might best remedy causes of attrition, stating, “It was primarily concerned with accounting for the differences, *within* academic institutions, between drop out as academic failure and as voluntary withdrawal”. Given this, Tinto (1982) notes the following shortcomings:

First, the model does not give sufficient emphasis to the role of finances in student decisions concerning higher educational persistence. Second, it does not adequately distinguish between those behaviors that lead to institutional transfer and those that result in permanent withdrawal from higher education. Third, it fails to highlight the important differences in education careers that mark the experiences of students of different gender, race, and social status backgrounds. Finally, it is not very sensitive to forms of disengagement that occur within the two-year college sector.

While Tinto’s model provided needed clarification to the retention process, subsequent research has focused not only on supporting this model, but adapting it to accommodate the changing student profile as well as different institution types.

Intersection of Conceptual Models

The conceptual models presented by Astin and Tinto incorporate important commonalities in explaining the interaction of important drivers of student success. In Appendix 3, a simplified depiction of the overlap in these two

models, as it pertains to the research in this dissertation, is provided. Both models share the idea that pre-college characteristics and resources, along with the student's interaction with his or her educational environment, shape the outcomes necessary to student success and retention. While Astin's I-E-O model is broadly compared to Tinto's model of student departure in this figure, these models are much more complex in actuality. While academic and social integration, highlighted here as part of the first year experience, might be viewed as an outcome of student interactions, they can also be viewed as inputs of student commitment to the institution. In total, Tinto's model is formed by a chain of inputs, experiences, and outcomes that ultimately lead to the student's retention decision.

Jacobi compared the works of Astin and Tinto in 1991, stating:

Astin's concept of involvement and Tinto's concept of integration clearly overlap and are sometimes used interchangeably. However, a careful reading of the theoretical models suggests that the concept of involvement primarily focuses on the student behavior, with attitude and affect being secondary concerns. In contrast, the concept of integration is primarily focused on students' attitudes and feelings about their educational experience, with behavior being a secondary concern.

The concepts of involvement and integration have played a central role in research on retention and academic success. Researchers have noted that while Astin's concept was primarily behavioral, Tinto's involvement added the element of the student's own perception to involvement (Jacobi, 1991; Berger and Milem, 1999).

Student perception has been used as a way to operationalize the concept of integration and commitment (Pascarella, 1985; Milem and Berger, 1997).

Research by Milem and Berger (1997) connected these concepts by providing support that involvement affects students' perceptions of institutional and peer support, which then affect students' institutional commitment. The authors also noted that while academic integration, using measures gathered directly from freshmen at a highly selective institution via a survey of early collegiate experiences, did not predict institutional commitment or intent to reenroll, social integration did. The authors noted that students attending such institutions were selected based on previous experience with academic achievement, and therefore face greater challenges with social issues than academic ones.

Involvement and integration has evolved in more recent research into the concept of engagement. As an offshoot of student involvement, Trowler (2010) defined engagement, stating:

Student engagement is concerned with interaction between time, effort, and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution.

Similar to integration, Gonyea (2006) described engagement as both behavioral, in terms of how the student interacts with the institution and its members, and psychological, in how he or she perceives these interactions. Research using measures of student engagement, supplied by instruments such as the NSSE,

provide support for the positive relationship between engagement and both GPA and persistence (Carini, Kuh, and Klein, 2006; Kuh, Cruce, Shoup, Kinzie, and Gonyea, 2008).

Drivers of Academic Achievement and Retention

Using these and related models as a framework to explore the complexities of student success and retention, significant research has been conducted in the past 40 years, designed to identify the mediators of the processes involved with student success. These drivers include background characteristics of the student and measures of the student's experience during the first year of college. Several aspects of the models have particular relevance in explaining LLPs as an attrition intervention, as well as providing context for associated drivers of student success in the first year.

Demographic Variables

Race and gender are typical demographic variables included in research on student success, though significance of each variable has shifted over time. Since retention in higher education became a subject of concerted study, both gender balance at postsecondary institutions and gender roles in society have changed. In 1950, women represented fewer than 40% of students enrolling in college (Iffert, 1958). By 2013, women had become the majority, representing

nearly 56% of college students (Kena *et al.*, 2015). Race was not captured as a variable in early studies, reflecting the lack of racial diversity in higher education of that era (Iffert, 1958). Pascarella and Terenzini (1998) noted that, like the female population in higher education, racial diversity is gaining, citing, “from 1984 to 1994, the total number of White undergraduates in American colleges and universities increased 5.1%. This growth compares to a 61% jump in the number of Asian, Hispanic, African American, and Native American undergraduates during the same period of time”. Currently, White students account for 59.3% of domestic enrollments in degree-granting postsecondary institutions, down from 83.5% in 1980, indicating the increased mix of racial and ethnic backgrounds in today’s college attending population (Snyder and Dillow, 2015).

Gender

Gender has long been a focus in studies of student success, though differences in gender are not always predictive of performance. Early studies concluded that there was little significant difference in the rate of drop out between sexes, though reasons for attrition tended to reflect the gender norms of society at that time (Cope and Hannah, 1975). For example, Iffert (1958) noted that the primary reason for drop out among women was marriage, while men cited lack of interest in studies and military enlistment. Spady (1971) noted that women were susceptible to factors that were “primarily intrinsic, subjective, and social criteria,

with academic and performance factors playing a more secondary role". Men, on the other hand, valued "their ability to meet the formal performance standards of the faculty, irrespective of the more intrinsically based social and intellectual factors" (Spady, 1971).

Less than a decade later, Bean (1980) noted that the changing attitudes regarding women and employment were reshaping the retention drivers, finding women more likely to be influenced by perceived improvement in employment opportunities. More recent research has shown that women have relatively higher rates of retention than men, with the gender-gap closing when longer periods of degree completion are considered (Astin and Oseguera, 2012). Therefore, while gender does not typically occupy a central role in retention research, it is often included as a variable of analysis in reviewing predictors of attrition.

Similar disparities are seen in the research regarding gender and academic achievement. DeBerard *et al.* (2004) noted that female gender, high school GPA, and SAT scores were each positively correlated with cumulative GPA in first year students, whereas only high school GPA was related to retention.

Race/Ethnicity

The linkage of race and student success is commonly associated with discussions of socioeconomic status (SES), academic preparation, and

commuter versus residential institutional effectiveness, where minority students are heavily represented among disadvantaged student groups. As Tinto (1993) noted, "it has been demonstrated that individuals from disadvantaged and/or minority origins are much more likely to be found in public schools generally and in the lower quality public schools in particular, it follows that they will be less well prepared for college...and more likely, therefore, to leave because of academic failure". In an early large-scale study of race and degree completions, Pascarella (1985) followed nearly 6,000 students enrolled in four-year colleges and universities from 1971 to 1980. This study uncovered few but significant differences between Black and White students. Among these, enrollment at large institutions, where creating peer connections would be more difficult, was inversely related to degree attainment. In a related finding, social integration contributed twice as much to the prediction of degree completion in Black men as academic integration, the opposite effect exhibited by White men. It is also meaningful to note that little variation between White and Black women were found.

While Pascarella's research was a start in exploring the differences in retention by race, it is limited in its focus on four-year institutions. Models of retention have generally been criticized as stemming from homogenous origins, particularly four-year, residential institutions during a period of predominantly White student enrollment. As Rendon, Jalomo, and Nora (2000) noted, "much of the most widely acclaimed research guiding theories of students' transitions to college,

departure, involvement, and learning was often based on White male students. This research produced a monolithic view of students devoid of issues of race/ethnicity, culture, gender, politics, and identity". As race and gender roles continue to change both higher education and society, research on persistence issues also continues to evolve to in response to changing demographics.

Citizenship

International students represent another changing population in higher education. In the past 40 years, the number of international students studying at US institutions has grown from 75,000 in the 1963-64 academic year to over 886,000 in 2013-14. Currently, these students represent 4% of the total US higher education population (IIE, 2014). As the economics of higher education become more complex and challenging, institutions are looking to other sources of income. International students represent one such avenue, increasing the number of academically prepared students who typically receive little to no financial aid (Lewin, 2012). According to the Association of International Educators (NAFSA), for every 7 international students enrolled, 3 jobs are created or supported in the United States through spending in higher education, accommodation, dining, retail, transportation, telecommunications, and health insurance sectors (NAFSA, 2014). In total, international students contributed \$27 billion to the US economy in 2013-14 (IIE, 2014).

When it comes to paying for their education, 74% of international students receive their funding from sources outside the United States, including personal and family funds (65%), while only 19% comes from US Colleges or Universities (IIE, 2014). In a survey of international students, Choudaha and Schulmann (2014) found that financial reasons, including the availability of scholarships (38%), access to jobs or internships (37%), and affordability (32%), were the most widely cited reasons for departure from doctoral institutions. The authors noted: “Students who fund their education through personal resources (savings or family as compared with scholarships or grants) were more prone to transferring to another institution. This also indicates their higher propensity to evaluate the ‘return on investment’ in education” (Choudaha and Schulmann, 2014).

In addition, academic performance and integration has been shown to be positively related to retention of international students. In a study of retention among international undergraduates at two public four-year state schools, Kwai (2009) noted that academic achievement was shown to “have a statistically significant and positive effect on persistence into the second year of international students”, and that second semester GPA, cumulative attempted credit hours, and employment on campus were positively related to retention to the sophomore year. In a study of 200 international participants of the Beginning Postsecondary Students Longitudinal Study, Mamiseishvili (2012) found that GPA, degree goals, and academic integration had a significant positive effect on

retention in international undergraduates. Mamiseishvili (2012) noted that “academic integration is important for international and American students alike. However, one might argue that interactions with faculty, staff and students become even more critical for international students as they try to adjust to foreign university standards and construct an American academic identity”. While academic integration was found to have a positive effect on international student retention, Mamisheishvili (2012) noted the opposite for social integration, hypothesizing that “international students had to limit their involvement in social activities in their first year and focus more on academics to be successful academically”.

Academic Preparation

There is a good deal of research to support the link between pre-college academic preparation and student success in the first year. Stronger student attributes such as high-school GPA or standardized test scores are routinely demonstrated to be predictive of increased first year GPA and rates of persistence, with the combination of high school GPA and standardized test scores often being the best combination of predictors of first year GPA (Astin, 1993; Ting and Robinson, 1998; Lotkowski, Robbins, and Noeth, 2004; Gifford, Briceno-Perriott, and Mianzo, 2006). As Sexton (1965) noted, “Mortality rates tend to be lower in institutions with high admissions standards that attract students of better social and economic background”. By establishing highly

selective admissions standards, institutions create stronger opportunities for student retention. In research designed to examine degree attainment by various factors including institutional type, gender, and academic achievement, Astin and Oseugura (2005) found that among institutional characteristics, the selectivity of the institution had the strongest effect on four-year degree completion, an amount comparable to the effect of high school GPA.

But, as Astin and Oseugura (2012) noted, the peer group that these institutions creates is also an important factor in determining retention, combining social integration with academic performance. As the authors described, “their most important asset is more likely to be the student peer group, which tends to be better prepared academically, more highly motivated, and from higher socioeconomic levels than are the peer groups at less selective institutions. For any student who might be contemplating dropping out, the presence of such peers might well cause that student to reconsider”.

Financial Resources

The relationship between academic success, retention and SES is particularly challenging as each is also linked with other barriers, including poor academic preparation, balancing home and school environments, and financial unmet need (Tinto, 1993). DesJardins Ahlburg, and McCall (2002) found that substantial differences in retention between low-income and other students exist, though through the application of financial aid, these differences can be overcome. The

authors noted, “Relative to a situation in which no financial aid was awarded, the existing aid package increased survival rates at the end of four years by 10 percent.”

Bozick (2007) provides additional support for these findings in a study that explored how economic constraints affect persistence of a sample of over 10,000 first year students. In comparing students by family income quintile, the author found that 44.1% of students in the lowest quintile did not persist to their second year, as compared to 22.7% of the highest income students. By comparison, the highest income students were also more likely to live in school-owned housing and less likely to work, while lower income students were more likely to live with their parents and work at a higher rate. As Bozick (2007) noted, “The very strategies that youths undertake to finance their education also limit their chances for attainment”.

Additional research has supported the concept that students from low SES backgrounds have challenges in their ability to succeed, including less time studying, less interaction with peers, and attaining lower first year GPA (Walpole, 2003). Looking at the investment students make in college, Pascarella, Smart, and Smylie (1992) noted that attending a high cost college may increase attainment and achievement through increased commitment, due to both the large investment made by the student and their family, and interaction with peers with higher educational aspirations. Further research indicated college cost had

a positive association with grades among all student groups studied with the exception of black males. It was noted, however, that this effect may also be due to the increased resources available to aid student success at higher cost institutions.

Building on research concerning SES and retention, financial aid has become an instrumental tool used by institutions to affect both the admission and retention decision. As Tinto (1993) noted, a method of increasing retention is to “provide financial support in an amount and form that enables low-income students to attend full-time rather than part-time and when necessary, work fewer hours, preferably on campus rather than off campus. This is important because the likelihood of completing a college degree is reduced when students attend part-time and/or work off campus for more than 20 hours a week”. In his research on the effect of student-level variables on retention, Chen (2011) corroborated this conclusion, noting:

A consistent finding across interaction effect tests is that financial aid that reduces net tuition (e.g. Pell grants or merit aid) is related to a narrower dropout gap between low-SES students and their higher SES peers. These findings confirm the need for a consistent emphasis on financial aid at the federal and state levels to promote equality in higher education.

In examining GPA of Pell aid recipients, which is typically used to identify students from low SES backgrounds, Fenske, Dillon, and Porter (1997) found no significant differences between Pell and non-Pell recipients. When examining the

amount of Pell aid received, the authors noted a negative relationship between award amount and first semester GPA, persistence, and graduation rates.

Bozick (2007), in discussing the use of aid in mitigating attrition, also suggests extending the boundaries of financial aid to include expenses that are not typically covered. Bozick noted, "Federal financial aid programs may consider partial or full room-and-board subsidies for disadvantaged students".

Additional research has explored how the type of aid received affects retention. Tinto (1993) summarized that "the growing consensus among researchers is that grants and work-study are more effective in promoting persistence than are loans and other forms of aid". DesJardins, *et al.* (2002) corroborated this view, finding that students' satisfaction with the type of aid received was more significantly related to persistence than the actual amount received. In this study, scholarships provided more benefit than grants of similar amount, and work-study opportunities were more beneficial to first and second year students than basic employment on campus. Though not proving a causal relationship, Stater (2009) noted that receipt of merit aid or need-based aid was predictive of first year GPA. Merit aid had the larger effect of the two types of assistance. While this aid typically goes to the most academically prepared students, which is related to first year success, Stater highlighted that this form of aid is often associated with GPA requirements to maintain the award. These requirements may also be related to persistence because merit aid is associated with the institution and is not transferable, as is federal need-based aid.

Commitment and Integration

In his model of student integration, Tinto (1975) noted that commitment, both to personal goals and to the institution, are necessary components of student success. Educational goal commitment, defined as “both the level of expectation...and the intensity with which the expectation is held”, is directly related to retention, with individuals who are more highly committed to attaining a degree being more likely to complete college. A student’s commitment to a specific institution is informed not only by personal degree attainment goals, family background, and academic preparation, but by how well these goals are met by that institution. This commitment continues to be informed by the student’s level of academic and social integration during enrollment.

Perception and Satisfaction

Commitment has been operationalized in different ways. In his model of student departure, Bean (1980) treated satisfaction and institutional commitment as the intervening variables between student background, institutional experiences, and the decision to persist. In this relationship, Bean noted that the degree to which a student viewed their experiences as positive affected their loyalty to the institution. Cabrera, Nora, and Castaneda (1992) used student satisfaction with the academic experience, among other perception measures, as a measure of academic integration. In addition, measures of a student’s perception of the institution and his or her decision to attend were used to operationalize

institutional commitment, resulting in a model that accounted for 45% of the variance observed in a student's intent to persist. Kuh (2009) noted that while student perceptions do not directly link to the amount a student learns, "they are directly related to whether students persist and are satisfied with their experience and, thus indirectly related to student outcomes". With the use of student surveys such as the NSSE, the Cooperative Institutional Research Program (CIRP), the College Student Experiences Questionnaire (CSEQ), and other instruments, incorporating student perception into research on academic success has become a more straightforward and comparable option.

Undeclared Status in the First Year

One potential measure of a student's commitment to their educational goals is whether they have declared a major in the first year. Caison (2005), who used enrollment in a transitional college for undecided majors as a measure of goal commitment, noted that "undecided students may not have the strength of goal commitment as students who are certain of their career path". In their study on the influence of college major on persistence, St. John, Hu, Simmons, Carter, and Weber (2004) found that having an undeclared major had a significant negative association with retention among White freshmen, although this relationship was not significant among African American freshmen. In addition, Shaw, Kobrin, Patterson, and Mattern (2012) noted low retention rates to the third year and lower than predicted college GPAs among students with

undeclared majors in their study of second year students.

Credits Attempted vs. Earned

Credit hours earned have been used to operationalize goal commitment, with the total number of credit hours a student is able to complete being directly related to their commitment to the institution (Caison, 2005; Pascarella and Terenzini, 1980). In their 1999 study, Sidle and McReynolds found a strong correlation between cumulative grade point average in college freshmen and the ratio of credit hours attempted to those earned. They also noted participants in a first year experience had higher cumulative grade point averages and a higher earned credit hour ratio than those students who did not participate, lending support to the efficacy of such learning programs.

Institutional Experiences

Modern research on retention and academic achievement highlights that success is not just dependent on the student, but also on the institution. Several factors related to a student's experience at an institution have been highlighted as drivers of achievement.

Type of Institution

Because of the differing missions and populations of students served across institutional type, including private and public community colleges and universities, retention levels can vary widely. In 2014, average retention to the

second year ranged from 55.9% in two-year public institutions to 80.9% in private doctoral institutions (ACT, Inc., 2014). Astin explored the issue of retention across different institution types as an aspect of his research on student experience. In 2005, Astin specifically focused on retention and degree attainment among varying institution types in response to public debate concerning accountability and reduced retention. Astin compared expected graduation rates calculated from a combination of inputs and environmental variables, along with SAT scores, and compared these rates to actual graduation rates. The results showed that while private and religious institutions had higher than expected four-year rates of completion, public institutions had lower than expected completion rates. These differences diminished when six-year rates were compared, indicating the public institutions had a significantly longer time to degree. Overall, Astin (2005) remarked, “more than two-thirds of variation among institutions in their degree completion rates is attributable to differences in their entering student bodies!” Astin used this research to promote the idea that comparing institutional retention rates is irrelevant unless student input information, such as student quality indicators, race and ethnicity, and gender are also considered to provide the appropriate context.

Scott, Bailey, and Kienzl (2006), also examined the effect of selectivity on the disparity between retention rates of public and private institutions, showing that more selective institutions (typically private) exhibit a 7% increase in graduation rate for every 100 point increase in the upper quartile for student SAT. In

addition, if inputs to institutions were made equal (in terms of student quality, need, age, etc.), gaps in graduation rate would be minimal, prompting the authors to state, “Public colleges are doing a relatively good job when one considers all of the constraints they face”.

Faculty Interactions

In terms of academic integration, faculty members are the primary drivers of a student’s educational experience. While the student’s in-class experience has bearing on his or her success, research has found that faculty interaction outside the traditional classroom setting is important to student achievement and retention. Investigating specific formats of interaction with faculty on student retention, Pascarella and Terenzini (1976, 1979) found that contact focused on intellectual or course related materials as well as discussion of career concerns had the highest bearing on persistence after the first year. Additional research specifically controlling for pre-enrollment characteristics indicated that the effects of informal student-faculty interaction are not simply a function of the predisposition of a certain type of student to seek that form of communication. The quality and quantity of student-faculty informal relationships made a significant contribution to freshman year outcomes, including first year GPA (Pascarella and Terenzini, 1978). As the authors summarized, “informal faculty-student contacts beyond the classroom may be an important factor in enhancing—and perhaps integrating—the impact of academic and non-academic

experiences of college during the critical freshman year” (Pascarella and Terenzini, 1976).

While research on faculty interaction has generally shown a positive relationship with student success, exceptions have been noted. Kuh (2003) noted that casual contact with faculty has little effect on learning on its own, as learning gains are dependent on both the nature and the frequency of faculty interaction. In addition, while faculty interaction may impact a student’s satisfaction with his or her academics, it may not facilitate all types of student satisfaction. For instance, Umbach and Wawrzynski (2005) noted that “faculty out-of-class interaction has little to no relationship with student perceptions of a supportive environment or student perceptions of gains. Students appear to seek their support from sources other than faculty.”

One potential benefit of LLPs is the integrated opportunity to increase non-classroom contact with faculty through residence-related programming and academic integration. In a review of literature regarding students’ out of classroom experiences on learning and cognitive development, Terenzini, Pascarella, and Blimling (1999) concluded that not all out of class experiences have similar effects on intellectual growth, and that residence halls offer an opportunity for cognitive growth, stemming not from place of residence, but from the promotion of interaction with peers and faculty. Thus, LLPs “blur the boundaries between students’ academic and out-of-class lives”.

Interaction with Peers

As with interaction with faculty, a student's interaction with their peers can have a significant effect on his or her ability to succeed in college. Hurtado and Carter (1997) conceptualized student integration as "the individual's view of whether he or she feels included in the college community". This feeling of inclusion is important for a student's development and ability to commit to and succeed at his or her institution. As Tinto noted, students who do not establish "the personal bonds that are the basis for membership in the communities of the institution," have a reduced likelihood of persistence (Tinto, 1993). Tinto (1988) hypothesized that student interaction is the foundation of social integration, one of the key tenets of his retention model, requiring repetitive contact with peers and other members of the institution. Astin (1977) noted that interaction in peer-based activities, such as student government, also leads to increased satisfaction with one's peers.

Research on social interaction has supported its effect on student perception and integration. In a 1997 study, Milem and Berger found that peer interaction was a significant positive predictor of measures of institutional and peer support. In a follow-up study, the authors (Berger and Milem, 1999) expanded on this relationship, noting that early involvement with peers tends to strengthen a student's perception of institutional and social support, which then promotes retention. Nora, Cabrera, Hagedorn, and Pascarella (1996) noted that peer

interaction was positively related to persistence, but this was not uniform across all students. While the relationship existed for both genders, peer interaction was significantly related to persistence in non-minority students, but not for minorities. Robbins, Allen, Casillas, Peterson, and Le (2006) also noted a relationship between measures of social engagement and student retention, but found that social activity was not associated with first year GPA when controlling for institutional characteristics and student standardized test scores. Tinto (1975), however, noted that while lower levels of social interaction can affect persistence, too much can adversely impact academic achievement when it detracts from a student's studies. In total, a student's peer relationships play as important a role in their potential for success in college as their academic relationships.

On-Campus Housing

Related to the type of college, the ability to live on campus, as opposed to commuting, has been shown to be beneficial both to academic success and student retention. Multiple studies have indicated that students residing on-campus in a residence hall perceive higher levels of peer support and social integration (Pascarella, 1984; Pascarella, Terenzini, and Blimling, 1994; Berger, 1997). In a series of studies in 1983, Chapman and Pascarella applied Tinto's model to explore differences in social and academic integration by type of institution. Examining a sample of over 2,300 students, the authors categorized the institution of enrollment as 4-year primarily residential (both public and

private), 2-year commuter community colleges, 4-year primarily commuter institutions, and mixed residential-commuter 4-year liberal arts colleges (Pascarella and Chapman, 1983a, b). Of the drivers of retention, the authors found variables associated with social integration to be the primary distinguisher of different institution types, with 2-year college students exhibiting the least social integration, 4-year universities having the most integration, and 4-year commuter colleges falling between these groups (1983a). In a related study, this finding was supported by comparing informal peer and faculty contact among students who persisted at 2-year and 4-year institutions, where 4-year students had significantly more contact outside of the classroom than those who withdrew. In comparison, 2-year students had less, potentially indicating that those who leave do so seeking a better institutional “fit” at 4-year institutions (1983b). When controlling for social integration, liberal arts colleges had both the highest student academic integration and the lowest rate of drop out, with 2- and 4-year commuter institutions falling at the other end of the spectrum (1983a).

The authors note that these differences hold significant meaning for both retention research and institutional policy. In terms of research, the authors noted, “Aggregation of data across colleges without respect to type is apt to mask differences that do exist. Alternatively, single institution studies do not capture the differences across colleges” (Chapman and Pascarella, 1983). In terms of policy, the authors caution against applying interventions found useful at 4-year residential institutions to commuter schools and 2-year institutions, as the

opportunities and drivers of student involvement and retention that these policies may be attempting to influence differ among school type (1983a).

Development of Living Learning Communities

Learning Communities

Stemming from the role of academic integration in student retention, academic officials have looked at curricular development as an attrition intervention. These communities are designed to increase faculty and peer interaction beyond levels achieved in the typical classroom experience by registering a cohort of students in multiple, collaboratively taught courses related by a common theme (Tinto, 2005a) noted that curriculum development and student learning are not necessarily connected, stating:

The irony is that the faculty of our universities and colleges are, as a matter of practice, the only faculty from kindergarten through universities who are literally not trained to teach their students – the students they wish they had as well as the students they do have. Nor are our colleges and universities well-structured to promote student learning. They are organized around faculty interests, not student learning.

Terenzini, *et al.* (1999) summarized the implications resulting from research on the impact of student experience on learning, noting that the cumulative effect of multiple experiences influence student learning outcomes; that there is a need for a sustained learning-centered environment on campus; and that college has the

strongest impact when the functional boundaries of student and academic affairs are blurred. When such curriculum revision occurs with the goal of supporting specific student communities, such as in honors programs, increased retention has been noted (Chapman and Pascarella, 1983; Astin, 1984). Many honors programs are a form of learning community, which typically involves co-registration of student groups into two or more classes, often with linkage of curriculum across the courses. This level of overlap presents the opportunity to incorporate collaborative learning experiences among students (Tinto, 1998). As Hoffman, *et al.* (2002) described:

Co-registering students in the same courses so they are studying the same material is advantageous for a number of reasons. At the very least, learning communities, by having students spend more time with one another, create a structure that increases the likelihood of interaction. Increasing the likelihood of student/student and student/faculty interaction increases the likelihood that students will more easily make connections with peers and faculty.

In research on learning communities, particularly with academically or socioeconomically challenged students, Engstrom and Tinto (2008; Tinto, 1993) noted significant increases in retention and engagement among student participants, compared to students who were not enrolled learning community. Using NSSE survey results from freshmen and seniors, Zhao and Kuh (2004) found that learning community participation was positively linked to increased engagement activities, interactions with faculty, perception of the campus environment, and learning outcomes.

Living Learning Programs and Student Success

Because of the integration of opportunities for heightened academic, peer, and faculty interaction in the program format, LLPs have the potential to foster increased student success and persistence, and therefore have been a focus of research in these areas. Though research has shown LLP participation positively affects first year GPA and retention, variations in efficacy can exist based on the types of programs offered. Pike (1997, 1999) examined persistence and learning outcomes using LLP participants in one of three types of selective LLPs, including a multi-year academic community, theme-related communities, and freshman interest groups (FIGs). Pike concluded that students in learning communities had significantly higher levels of informal faculty mentorship, meaningful peer interactions, and gains in general education than students in traditional housing, net of student background characteristics. Additional research using two-group path analysis to demonstrate that FIGs did not directly affect student persistence, when controlling for student background characteristics, but did reinforce social integration and institutional commitment (Pike, Schroeder, and Berry 1997).

In a 2003 study, Stassen also demonstrated a link between LLPs and academic performance, as well as mixed results in examining the effect of LLPs on persistence. In examining three types of LLPs separately, including a general education model for first year students, a major-focused program open to all

levels, and an honors college, Stassen highlighted significant differences between LLP types in terms of the type of student attracted, based on student background characteristics. In addition, using linear regression, Stassen was able to demonstrate a significant positive relationship between LLP participation, regardless of the type of LLP, and first semester GPA, after controlling for background characteristics. In examining persistence, however, Stassen found that only the general education program was consistently related to decreased odds of attrition in two cohorts of freshmen used in the study, reflecting Pike's inconsistent results.

Stassen also sought to clarify how LLPs affect a student's academic and social engagement. Using student survey results, Stassen noted that LLP participants reported stronger scores than traditional housing students on several measures of academic integration, except the frequency of faculty interaction. In addition, Stassen (2003) reported that major-based LLP participants had a significantly higher mean response to questions of quality of interaction with peers around academic work. In addition, general education LLP participants had generally lower measures of academic behavior, although these were still higher than the general population and likely attributable to differences in the selection process between the three LLPs. Additional research by Inkelas and Weisman (2003) demonstrated varying outcomes and experiences based on differing LLP format. While research indicated that all LLP participants demonstrated stronger levels of engagement, based on a survey of both LLP participants and students in

traditional housing, significant differences existed in the experiences of student by type of LLP. In particular, students in first year support (transition) housing, curriculum-based programs and honors programs demonstrated significant differences in participation in academic and social activities, use of critical thinking skills, and peer interaction in comparison to students in the traditional housing. Overall, students in the transition and curricular-based programs found their residential environment more academically supportive, while students in the honors and curricular-based programs found their environment to be more socially supportive than nonparticipants in the control group.

Inkelas and her colleagues have done substantial research on LLPs by which to establish a system of comparison and analysis of LLPs across institutions. A major effort was the National Survey of Living Learning Programs (NSLLP) (Inkelas, 2008). The study provided a profile of student participation in LLPs, highlighting significant differences in gender, academic preparation, financial resources, and first year experiences between LLP participants and a control group of non-participants. Additional research also reinforced findings of increased faculty interaction, and more academically and socially supportive residential climates existing in LLPs when compared traditional housing (Inkelas, *et al*, 2006, Inkelas, Vogt, Longerbeam, Owen and Johnson, 2006). Multi-institution studies are complicated, however, by differing terminology and program formats, as well as lack of a universal system of defining and comparing LLP formats (Inkelas and Soldner, 2011). Common definition of LLP types, as

well as additional research to clarify how differing LLP formats affect the academic experience of participants, are necessary next steps in developing a greater understanding of the role of LLPs in higher education.

Limitations of Existing Research

LLPs are a natural fit for larger institutions looking to establish a more personal educational experience for students. Much of the research on LLPs has focused primarily or entirely on public institutions (Pike *et al.*, 1997; Pike 1999; Inkelas and Weisman, 2003; Stassen, 2003; Pasque and Murphy, 2005; Inkelas, 2008). This research is still developing, with studies focused on the aggregated effects of multiple LLP formats into a single indicator of participation. Inkelas and Soldner (2011) noted that combining multiple program types into a single LLP grouping could potentially mask differences among programs. While much research has been done on LLPs with significant levels of structured academic integration, Brower and Inkelas (2010) noted that over half of the LLPs studied in the NSLLP don't include any coordinated form of academic coursework. Therefore, the next step in LLP research is to identify differences in types of categories of LLPs as they relate to student success. Since the majority of programs studied in current research are well established, requiring students to apply for residency, gaps in research exist in understanding how participation of students who are placed in the LLP affect overall outcomes, and whether the

outcomes of these students differs for LLP students who opted in, or those in traditional housing. Finally, as demographic, economic, and political factors continue to influence the mix of students accessing higher education, continued research on student retention and achievement is necessary to understand and maintain the efficacy of interventions on the changing incoming student population.

CHAPTER 3

Research Methodology

The following chapter outlines the methodology, research sample, and procedures used to examine the association of participation in living-learning programs by college freshman with first year retention, and GPA, and academic achievement. To better explore the association of LLPs and student academic success, several research questions were developed:

1. Do LLPs attract students who are better prepared academically? Do they differ from students in the traditional housing population in terms of demographics or other background characteristics?
2. Is LLP participation associated with increased retention or academic achievement in first year students?
3. Do different LLP formats vary in terms of the relationship of the format type to levels of academic success of the residents?
4. Do students who opt in to LLPs prior to their freshman year differ, in terms of rates of retention, academic achievement, and level of satisfaction, from students who are placed in to LLP housing, or those in traditional housing?

5. Is LLP participation associated with increased levels of satisfaction and commitment? How do differences in satisfaction and commitment relate to retention and academic success?
6. How do faculty and staff advisors and RAs view the effect of LLPs on student success?

Research Design

The work of Tinto and Astin, described in Chapter 2, provided the conceptual frameworks for this research study. Based on these frameworks for retention and student commitment, several commonalities emerge. First, a student's experience is heavily influenced by background characteristics such as gender, race/ethnicity, and SES. In addition, the level of academic preparation a student brings to college is a significant predictor of his or her ability to succeed. Once in school, a student's level of commitment to the institution, along with academic and social interactions with faculty and peers, are all key drivers of retention and academic success.

To operationalize these research questions, a mixed methods study including quantitative and qualitative components was conducted to explore the association of LLP participation with student retention, academic achievement, and perception of the first year experience. This study was non-experimental,

exploring the effect of existing programs on student success. A concurrent mixed methods approach was chosen to provide a more comprehensive understanding of the research questions, allowing for both a general analysis of a large sample of students as well as follow-up with key participants in the LLPs for deeper insights and specific points of view. Information gathered during both the quantitative and qualitative analyses was compared to inform both processes (Creswell, 2003).

The main research questions were operationalized as follows:

1. Are there statistically significant differences in entering student characteristics, rates of retention, and first year GPA for students in the following populations:

- LLP participants vs. participants in traditional housing
- Type of LLP (Honors, Academic, Special Interest)
- Students who opt in to LLPs versus those who were placed

When controlling for demographic and academic preparation indicators, is LLP participation, as opposed to traditional housing residence, a significant predictor of retention and/or first year GPA?

2. Are there statistically significant differences in the levels of academic commitment and interaction between LLP and traditional housing students? Among students participating in different LLP formats? Between choice

- versus placement in LLPs? When adding controls for levels of student commitment and interaction, is LLP participation a significant predictor of attrition and/or 1st year GPA?
3. When controlling for demographic and academic preparation indicators, is LLP participation a significant predictor of satisfaction with faculty engagement? Satisfaction with peer interactions? Evaluation of their overall experience?
 4. How does the student's performance and perception of their first year experience correspond with the perceptions of LLP advisors and student RAs?

Research Setting

Boston University

BU is a private, four-year research institution located in Boston, Massachusetts. Supporting over 33,000 students in 17 schools and colleges, BU is the fourth largest independent, not-for-profit, primarily residential institution in the United States (BU Institutional Research, 2014; BU Federal Relations, n.d.). About half of the student population at BU is undergraduate, numbering over 15,000 in the fall 2013 semester. As a highly selective institution, BU received more than 52,000 applications for places in the entering class of fall 2013, bringing in 3,807

students with an average SAT - Combined of 1929 and high school GPA of 3.59 (Barlow, 2013). As part of an overall strategic planning initiative at BU, President Robert Brown set a goal to increase the current freshman-to-sophomore retention rate from the rate of 92.8% to 95.0%. In describing the strategic goal for increased retention, Dr. Brown stated that “students should feel they belong; believe that they can academically succeed; believe the University cares for them” (Brown, 2010).

First Year Retention

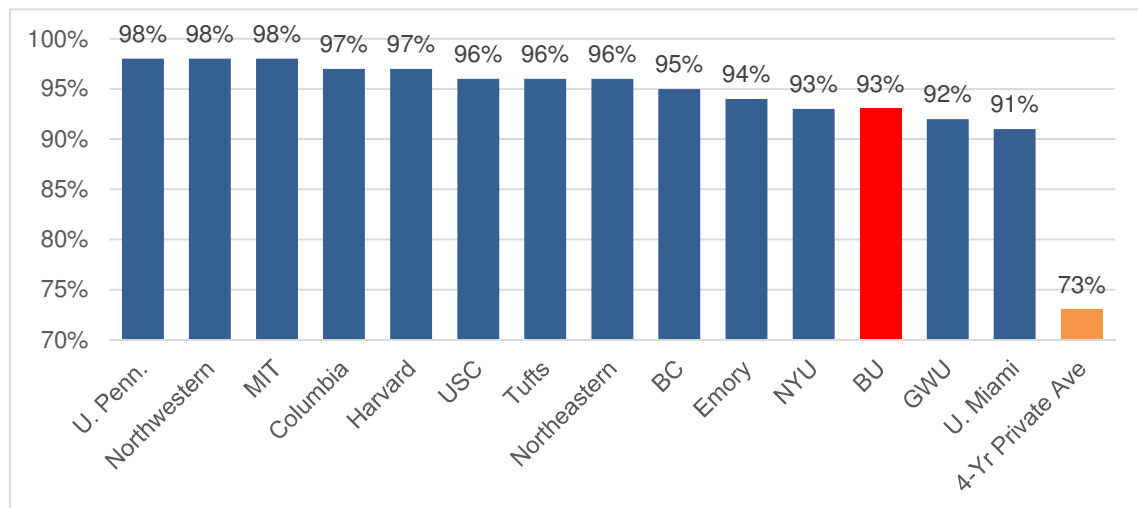
In a study of retention at higher education institutions, ACT, Inc. (2014) found that private doctoral institutions report a mean freshman-to-sophomore retention rate of 80.9%, with overall average of 67.6% for all institutions. BU outpaces the majority of private, four-year institutions nationwide in terms of retention. In comparison to local and strategic peers, as seen in Figure 3.1, BU has opportunity for improvement

Comparing the first year retention rates for the entering full-time undergraduate cohorts of fall 2013, BU falls in the lower range of both institutions in the greater Boston area and those of similar size and academic diversity (93% compared to 98% at Northwestern University, and 96% at the University of Southern California and Northeastern University) (Dept. of Education, 2016). Therefore, interventions that indicate even modest improvements in student retention would

assist in bridging the 2% gap towards BU's strategic goals, bringing the institution better in line with peer institutions.

Figure 3.1:

A Comparison of First Year Retention Rates



Housing and Living-Learning Programs

Approximately 75% of BU's undergraduate population lives in on-campus housing, which is a requirement for first year students (Trustees of BU, 2012; BU Housing, n.d. a). Among the housing options available to new and continuing students are a series of specialty communities, defined as "a floor or house where students with similar interests live, study and socialize together" (BU Residence Life Task Force, 2009). Inkelas, Soldner, Longerbeam, and Leonard, (2008) developed typologies for LLPs based not on the program subject, but on size and area of control of these programs within the institution. Using these

categories, BU's LLPs would be considered Small, Limited Resource programs primarily organized by the Office of Residence Life. The programs, numbering over thirty, fall into two general formats; communities based on a shared academic program or major and communities that support a common interest that is not necessarily linked to an academic outcome (Appendix 3). The primary distinction between academic and special interest programs is the presence of a stated academic requirement such as a particular major or minor. Based on the thematic typology used in the NSLLP, the academic format group is composed of programs in the Cultural, Disciplinary, Creative and Fine Arts, Women's, and General Academic Program categories. Special interest programs do not involve the same academic emphasis and include program types such as Civic/Social Leadership, Political Interest and Leisure programs (Inkelas, 2008). In 2010, the Kilachand Honors College (KHC) was created, providing approximately 100 to 150 entering students the opportunity to participate in an LLP with an integrated four-year curriculum that includes shared classes and seminars (BU KHC, n.d.). Though specialty housing at BU has been available for over 30 years, KHC is BU's newest format. KHC can be considered a Large, Comprehensively Resourced program resulting from collaboration between Academic and Student Affairs (Inkelas *et al.*, 2008)

Students can apply to participate in specialty housing in one of two ways.

Continuing students must complete an application to a specific specialty community, and are placed subject to approval by the community administration

and the Office of Residence Life (BU Housing, n.d. b). As entering freshmen, however, students can indicate interest in up to three specialty communities, as well as specify the importance of specialty community placement in their final housing assignment, as part of the BU Housing Interest Survey. Final housing assignments are determined by the Housing Office based on survey responses and available space (BU Housing, n.d. a). KHC selection differs somewhat, based on an essay component and evaluation of the student's overall application to the University at the time of admission (BU KHC, n.d.). While a percentage of students are placed into the programs, the majority of students are self-selecting.

Interest in specialty housing has varied, resulting in a disparity in fill rates, or the proportion of students who opted to reside in the community compared to the available bed space. When all available bed spaces are not filled with specialty community applicants, current housing policy necessitates placement of non-applicants within the residence in order to use all available space. Placement of non-applicant students into specialty housing to utilize all available bed spaces can affect the overall LLP experience. In a 2012 comparison of LLP formats, Frazier and Eighmy noted that overall satisfaction was lower within communities that include both students who chose the LLP and those who were placed, when compared to LLPs that had 100% opt in rates. The authors highlighted that dissatisfaction arose among students who were placed in the LLP because they did not feel they needed to comply with the LLP policies, while students who

chose the program did not feel they were receiving the promised experience when mixed with students who choose not to participate.

The mix of housing programs available at BU provides an opportunity to compare the effectiveness of LLPs with differing levels of academic integration to residence in traditional housing. The presence of students who are placed into LLPs provides an additional area of investigation into the relationship of LLPs on first year retention and academic achievement on different types of student participants.

Data Collection Procedures and Instrumentation

Entering Student Dataset

The sample dataset used in this analysis was produced by Boston University's Office of Institutional Research. Data for first-time, full-time undergraduates that entered in the fall semester between 2010 and 2013 were collected from Boston University's admissions, aid, housing, and registration systems and merged into a single dataset with student identifiers such as name and ID removed. In total, there were 16,115 records in the dataset. Table 3.1 provides the distribution of the records by fall semester of entry, which ranges from 23.6% of the total records accounted for by the fall 2013 entering class to 27.4% of the records accounted for by the fall 2010 entering class.

Table 3.1

Distribution of First-Time, Full Time Undergraduates by Semester of Entry – All Records

Fall Semester of Entry	Count	Percent
2010	4,409	27.4
2011	4,022	25.0
2012	3,877	24.1
2013	3,807	23.6
Total	16,115	100.0

On-campus housing is required of first year students, but an exception may be granted if the student is living locally with a parent, child, or spouse, or if the student is 21 years or older. Approximately 25 to 30 students per year are granted an exception, and were removed from this analysis. In addition, records were reviewed for instances of disciplinary and academic suspension by the institution. Tinto noted the need to distinguish between students who withdraw voluntarily and those that leave due to academic dismissal, noting differences in personal motivations between the two groups (1975). Keeping with this distinction, a total of 62 students were removed from the analysis because their attrition was the result of the action of the institution and not by personal choice. The final distribution of records per entry year are provided in Table 3.2.

Table 3.2

Record Counts of First-Time, Full Time Undergraduates by Semester of Entry

Fall Semester of Entry	Original Count	Off-Campus Exclusion	Suspension Exclusion	Final Count	Percent
2010	4,409	31	16	4,362	27.4
2011	4,022	33	11	3,978	25.0
2012	3,877	23	19	3,835	24.1
2013	3,807	27	22	3,758	23.6
Total	16,115	114	68	15,933	100.0

National Survey of Student Engagement Dataset

The NSSE attempts to measure students' perceptions of their level of engagement in and satisfaction with activities that related to good educational practices. Since 2000, over 1,600 institutions and 5 million students have participated in the survey, administered by the Center for Postsecondary Research at Indiana University's School of Education (Center for Postsecondary Research, 2015).

The 2014 U.S. English version of NSSE consisted of five main sections of questions, plus two optional survey modules. The standard sections included:

1. Participation in educationally purposeful activities;
2. Institutional requirements and the challenging nature of coursework;
3. Perceptions of the college environment;
4. Estimates of educational and personal growth since starting college; and

5. Background and demographic information (Center for Postsecondary Research, 2015).

As Kuh (2001) noted, there are several potential issues with self-reported data, including the inability of the respondents to accurately provide information, the reluctance on the part of the respondent to provide truthful answers, and the “halo” effect by which the response of the student may be different from reality.

To alleviate these sources of potential error, the NSSE was designed to meet five conditions that promote more precise answers from those surveyed. Carini, Kuh, and Klein (2006) summarized these conditions:

- The information requested is known to the respondents;
- The questions are phrased clearly and unambiguously;
- The questions refer to recent activity;
- The respondents think the questions merit a serious and thoughtful response;
- The respondents think the question does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in a socially desirable way.

Astin and Lee (2003) pointed out that results of NSSE and other engagement surveys need to be interpreted through the lens of entering student characteristics that may make students more or less inclined to be engaged. The authors compared the responses of over 20,000 students from questions similar

to NSSE from a survey administered at matriculation to those from NSSE and the College Student Survey (CSS) in an attempt to create a pretest/posttest comparison. Though questions were similar in intent, they were not identical. The authors concluded that the engagement characteristics of students prior to matriculation were consistent with those during their senior year. Because of this, the authors recommended including relevant information about students from the time of matriculation in analysis when making comparisons of levels of engagement between student groups or institutions when assessing the impact of the institution on engagement. In addition, Pascarella, Seifert, and Blaich (2010) found that self-reported data from the NSSE represented a sufficient representation of measures of growth in educational outcomes in a study of nearly 1,500 students at 19 institutions, again using pre- and post-testing for reasoning and problem solving, inclination toward life-long learning, intercultural effectiveness and other measures. NSSE results provide an existing source of student-provided information, which is used as a proxy for student attitudes and involvement in the following research.

In the spring of 2014, students coded as first year or fourth year undergraduates at Boston University were invited to participate in the NSSE. The survey was administered online to a total of 3,744 first year students, with 2,349 responses received for an overall response rate of 63%. In comparison, the average institutional response rate for all NSSE participants in the 2014 survey was 32% (Center for Postsecondary Research, 2015). This remarkably high response rate

was achieved through several initiatives coordinated across administrative offices within the University. First, all known surveys of the undergraduate population were cancelled or postponed during the NSSE survey period to avoid survey fatigue among the freshmen and senior participants. Second, incentive in the form of \$5 in convenience points, available for use at stores and restaurants on campus, were given to participants shortly after receipt of their response. Additional incentives, including iPads and pizza parties, were provided to RAs whose floors had the highest percentage of possible respondents. Finally, a publicity campaign was mounted during the survey period, including an article in the University's news source, BU Today, and posters and other collateral placed in student centers across campus. The larger sample size provided by this high response rate was instrumental in providing dependability in assuming generalizability of the results of the sample population to that of the overall population. In a 2013 study, Pike noted that results met accepted standards for dependability of educational measures with a population size as few as 50 students.

NSSE participant responses were merged with records from the entering student dataset for analysis. From the 2014 NSSE survey instrument, a subset of questions were chosen for potential inclusion as measurements of academic, social, and overall perception of the university.

Qualitative Data Sample

Interviews were conducted with 16 participants representing eight of Boston University's LLPs, including student RAs and Faculty and Staff Advisors. Due to restrictions placed on data collection by the Boston University Institutional Review Board (IRB), student participants of LLPs in the spring 2013 semester were not included among the interview candidates. Specifically, the timing of the release of the NSSE results in late summer of 2013, which was required to be treated as an existing data source, prohibited approval of this research project by the IRB until all existing data sources were available. Because the students who participated in the NSSE would no longer be on campus, and those who were not retained would have already withdrawn, the decision was made to approach the student RAs and faculty and staff advisors who have direct contact with the student participants. The distribution of participants by function and LLP type is available in Table 3.3.

Table 3.3

Distribution of Interview Participants by Job Function and LLP Type

	# Programs	Faculty/Staff Advisor	Resident Assistant	Percent
Honors	1	3	1	25%
Academic	5	3	4	44%
Special Interest	2	2	2	25%
Traditional	na	1	-	6%
Total	8	9	7	100%
Percent		56%	44%	

A goal of 15 interviews was chosen, including at least one faculty and student advisor from each LLP type. Participants were more heavily weighted among Academic LLPs because of the breadth of programs, which, when combined, have the largest number of LLP participants of the three types.

Specific programs were identified for recruitment of interview candidates based on analysis of enrollment, retention, GPA, and NSSE data, targeting programs with larger numbers of freshman participants in fall of 2013 and varying in student academic and engagement profiles. Outreach to interview participants was conducted through the Office of Residential Life at Boston University, whose Director contacted potential candidates from the list of LLPs. Final participants contacted me directly based on this outreach. All participants signed an Informed Consent document, and students received a \$10 food/beverage gift card for their participation. A copy of the Informed Consent and an overview of the interview questions is provided in Appendix 4.

As with all qualitative research, there are limitations that may impact the research detailed in this study. Atieno (2009) identified three potential limitations to qualitative research, which include interpretation and categorization, ambiguity, and generalizability. In term of interpretation and categorization, the themes identified in the research below may not include all potential themes available from the collected data. As Atieno (2009) notes, “qualitative analysis allows for the fine distinctions to be drawn because it is not necessary to shoehorn the data

into a finite number of classifications". Errors in interpretation are also possible due to multiple meanings of intended words or phrases. In addition, the findings of this population may not be extended to a wider population with the same degree of certainty as quantitative research can through statistical analysis.

While relevant themes are identified and triangulated through use of similarity in comments by multiple interview subjects, this is no guarantee of generalizability to all participants in LLPs (Atieno, 2009).

Key Variables

Variable Selection

Based on the conceptual frameworks of Tinto and Astin, freshman data commonly available from federal and institutional sources were identified to operationalize the research questions in this study. Of particular interest were the roles of LLP involvement, along with student perception, and academic and social integration on the retention decision and academic success. Inputs, social and academic environment, and outputs were modeled using variables collected from the Common Application, the Federal Application for Financial Student Aid (FAFSA), the NSSE and institutional data collected by the Offices of the Registrar, Admissions, Financial Aid, and the Housing Office at BU.

Dependent Variables (Outcomes)

1. Student retention was identified by the federal definition of freshman-to-sophomore retention, using enrollment in the fall semester subsequent to the fall semester of initial enrollment (NCES, 2015). Therefore, for students entering in the fall 2013 cohort, subsequent enrollment in the fall 2014 semester would indicate retention.
2. Academic success was defined as the cumulative GPA for the first academic year (including fall and spring semesters) of enrollment. For students entering in the fall 2013 cohort, this would be the cumulative average of grades received in the fall 2013 and spring 2014 semesters.
3. Level of integration with the institution was measured by self-reported responses to three questions from the 2014 NSSE. Questions sought out degree of satisfaction with academic and social interactions, as well as the students' overall impressions of the institution. Specific questions and measurement scales used in analysis include:
 - Quality of interactions with students [QIstudent]. Likert scale ranging from 1 (poor) to 7 (excellent) with a not applicable option.
 - Quality of interactions with faculty [QIfaculty]. Likert scale ranging from 1 (poor) to 7 (excellent) with a not applicable option.

- How would you evaluate your entire educational experience at this institution? [evalexp]. 4-category scale including poor, fair, good, and excellent.

Independent Variables

Data were collected for students entering Boston University in the fall 2010, 2011, 2012, and 2013 cohorts, unless noted below.

1. Background Characteristics (Inputs). Variables include demographic information as well as academic and financial indicators associated with each student upon entry at BU. Specific variables included:
 - a. Gender – students were categorized as male (1) or female (0).
 - b. Domestic/International – students who were non-US citizens and were in the United States on a visa or a temporary basis were classified as international. Students with US citizenship or non-US citizens residing in the country as permanent residents were classified as domestic
 - c. Race/ethnicity – using the federal definition of race and ethnicity (NCES, 2015), domestic students were categorized into one of seven categories: Asian, Black or African American, Hispanic, White, Two of More Races, Other (which includes American Indian

or Alaskan Native and Native Hawaiian or Pacific Islander), or Ethnicity Unknown.

- d. SAT or converted ACT – applicant’s recorded SAT score. If no SAT score was provided, ACT score was converted using the College Board’s SAT-ACT concordance tables (College Board, 2009).
- e. High School GPA – applicant’s recorded cumulative high school grade point average.
- f. Calculated indicator of unmet financial need – the institutional calculation of financial need remaining after reported income and tuition costs are considered.
- g. Pell recipient indicator – students receiving federal Pell funding were identified.
- h. Financial aid by type – for students receiving financial aid, an indicator receipt of aid was recorded by type, including merit, need-based and loan. Merit aid is aid that is provided by BU and is based on student performance and does not require repayment. Need-based aid is provided to close the gap between what a student is able to contribute and the total cost of education. Loans

exclude loans made by private companies not affiliated with Boston University or the federal financial aid system.

2. Goals/Commitment (Inputs): Variables that are indicators of a student's overall commitment to BU as well as their planned goals during their attendance at the institution. Specific variables included:
 - a. Credits attempted versus earned – the difference between the number of credits a student registered for in a semester and the number completed. The difference was calculated for both fall and spring semesters of the students' first year.
 - b. Undeclared status – students coded as undeclared in either semester of their first year were identified.
 - c. Overall Experience - for students in the fall 2013 entering cohort who participated in NSSE, their recorded responses to the question "How would you evaluate your entire educational experience at this institution?" (Excellent, good, fair, or poor). This variable was also used as a dependent variable.
3. Institutional Experiences/Integration (Environment): Variables that are indicators of a student's academic and social experience at BU. Specific variables included in the following analyses are:

- a. Participation in an LLP– students who participated in any of BU’s LLPs in the fall semester of their first year were identified.
- b. Type of LLP – for students participating in LLPs, the type of program was coded as honors, academic, or special interest, depending on the stated requirements of the program.
- c. Indicator of opt in versus placement – for students who received an LLP placement that was among their top three choices for housing in their freshman year, a code of opt in (1) was recorded. Student who did not indicate their LLP of residence in their freshmen year among their top housing choices were considered to be placed in (0).
- d. Academic satisfaction and engagement - for students in the fall 2013 entering cohort who participated in NSSE, their recorded responses to the following question (response scale in parentheses):
 - i. Quality of interactions with faculty (Scale of 1-poor to 7-excellent with “not applicable” option). This variable was also used as a dependent variable.
- e. Social Satisfaction and Engagement - for students in the fall 2013 entering cohort who participated in NSSE, their recorded responses

to the following question (response scale in parentheses):

- i. Quality of interactions with students (Scale of 1-poor to 7-excellent with “not applicable” option). This variable was also used as a dependent variable.

Data Analysis

Analysis of the data collected was achieved through a mixed methods approach involving primarily quantitative procedures with supporting qualitative analysis.

Quantitative Analysis

Data were analyzed using IBM SPSS Statistics Software (version 20) using multiple statistical procedures. Descriptive statistics such as mean, median, standard deviation and frequency were reported, where appropriate, for all variables. An alpha level of .05 was used to assess statistical significance.

Below are the descriptive and analytical methods that were applied to each quantitative research question.

Question 1 - Independent samples t-test was employed to test for statistically significant differences among continuous variables between the population of students in LLPs and those in traditional housing, as well as differences in comparing students who opt in to LLPs as compared to those students who were

placed into the programs. For categorical variables, chi-square testing was employed. When testing for significant differences between the three types of LLPs, analysis of variance (ANOVA), and chi-square were employed for continuous and categorical variables, respectively.

Logistic regression was used for analysis of the dichotomous outcome of persistence, with student attrition as the dependent variable. Multiple regression was used to analyze predictors of first year GPA. In both cases, the regression model provides an equation of probability of attrition based on the combination of independent variables presented.

Question 2 – For analysis of the variables collected through the NSSE, t-test and ANOVA were employed for scaled variables, and chi-square testing was employed for categorical variables to test for differences among LLP participants as well as between students who opt in to LLPs as compared to those students placed into the programs. Analysis of predictors of attrition and first year GPA was accomplished through logistic regression and multiple regression, respectively.

Question 3 - Analysis of predictors of quality of interaction with student, quality of interaction with faculty, and overall experience at the institution was accomplished through multiple regression and binary logistic regression analyses.

Qualitative Analysis

Data collected via one-on-one interviews with faculty and staff advisors and RAs were recorded and transcribed verbatim. Analysis of the written transcripts was accomplished using NVivo version 11.

Question 4 – Interview transcripts were reviewed and emergent patterns were coded using thematic analysis. Triangulation of emergent themes was accomplished through comparison of feedback from multiple respondents as well as comparison of themes to data collected via NSSE. Marshall and Rossman (1999) described six stages in which thematic analysis is accomplished. These stages include: organization of data, generation of categories or themes, coding of data, testing of the emergent understanding of the data, searching for alternative explanations for the data, and writing up of the analysis.

CHAPTER 4

Results

The following section describes the results of analyses designed to examine the relationships among participation in living learning programs and academic success, engagement, and retention. Data were collected and analyzed for four entering undergraduate cohorts at Boston University. In total, nearly 16,000 records for students entering between the fall semesters of 2010 and 2013 were included. The follow chapter outlines the demographic breakdown for this population along with the data analyses associated with each research question outlined for this study.

Sample Population and Demographic Profile

In total, data were collected for 15,933 first-time, full-time undergraduates students over a four-year period. While record level student data were stripped of name and student ID to preserve confidentiality, basic demographic information such as gender and race/ethnicity were available for inclusion in this analysis. Table 4.1 shows the demographic distribution for the records of analysis. Compared to national undergraduate enrollments at private nonprofit institutions, BU's entering population between the fall of 2010 and the fall of 2013

had a higher representation of female (61.1% compared to 57.4% nationally) and international students (15.6% compared to 4.3% nationally) (NSF, 2013). Boston University is a leader among domestic institutions in regard to its international student population, ranking 12th in total enrollment nationwide (IIE, 2014). Looking at the sample's composition by race and ethnicity, while BU had a lower percentage of students who identified as White (46.5% of total students, compared to 57.2% nationally), students who identified as Asian were more predominantly represented among the BU population (13.5% of total students, compared to 5.0% nationally) (NSF, 2013).

Table 4.1

Frequency and Percent of Undergraduates by Gender and Race/Ethnicity

Demographic Variable	Frequency	Percent
Gender		
Female	9,728	61.1%
Male	6,205	38.9%
IPEDS Race/Ethnicity		
Non-Resident Alien	2,493	15.6%
Missing	1,260	7.9%
Hispanic/Latino	1,498	9.4%
Asian	2,145	13.5%
African American or Black	467	2.9%
White	7,411	46.5%
Other Race/Ethnicity	659	4.1%
Total	15,933	100.0%

Note: 24 students, or 1.5% of the total population, identified as American Indian or Alaskan Native or Native Hawaiian or Pacific Islander. These categories were consolidated with students identifying Two or More Races in the Other Race/Ethnicity category.

Of the sample population, 22.8% lived in LLP housing. Of these students, 55.8% chose the learning program in which they resided as part of their freshmen housing interest survey, which was completed prior to matriculation in the fall semester. A summary of LLP participation by gender, race and ethnicity, and choice of program is shown in Table 4.2.

Of the three types of LLPs, the academic format contains both the greatest number of programs and the highest number of participants, including just over 80% of all LLP participants. The remaining 20% are split between the honors and the special interest formats. Gender, race and participation rates are provided in Table 4.3. Females represent a greater proportion of participants in honors and special interest housing than in academic housing, while there are over four times as many international participants in special interest LLPs (representing 30.4% of total special interest participants) as in the honors LLPs. In terms of LLP choice, the honors LLPs have the highest percentage of students that opted in, at 94.5%, driven by the housing requirement for participation in the Kilachand Honors College.

Data Analysis

Descriptive statistics, including frequency, mean, median, and standard deviation, as appropriate, are provided for the key variables used in analysis. Inferential statistics are also provided in this analysis. To test for statistically

significant differences in retention, t-test analysis was employed for continuous variables and chi-square to test differences in frequency. ANOVA was conducted to test for significant differences among group means when comparing the populations of the different housing formats. In addition, post hoc Tukey HSD was employed in conjunction with ANOVA to determine which groups, if any, within analysis population showed significant differences.

Table 4.2

Frequency and Percent of LLP and Regular Housing Participants

	LLP Participation				Chose LLP (1)	
	Did Not Participate (0)		Participated (1)			
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender						
Female (0)	7,539	61.3%	2,189	60.2%	1,187	58.4%
Male (1)	4,756	38.7%	1,449	39.8%	844	41.6%
Race/Ethnicity						
Non-Resident Alien (1)	1,801	14.6%	692	19.0%	286	14.1%
Missing (2)	954	7.8%	306	8.4%	166	8.2%
Hispanic/Latino (3)	1,193	9.7%	305	8.4%	190	9.4%
Asian (5)	1,636	13.3%	509	14.0%	303	14.9%
African American or Black (6)	376	3.1%	91	2.5%	52	2.6%
White (8)	5,811	47.3%	1,600	44.0%	962	47.4%
Other Race / Ethnicity (9)	524	4.3%	128	3.5%	71	3.5%
Total	12,295		3,638		2,031	

Regression analysis was employed to measure the relationship between the dependent variable, which included retention, first year GPA, and measures of student perception, and several independent variables associated with the

student's college preparation and experience. Logistic regression was used for analysis of the dichotomous outcome of persistence, with the dependent variable of analysis being retention of the student, as well as in analysis of the student's perception of his or her overall experience. Linear regression was employed for analysis of scaled dependent variables, including first year GPA, quality of interaction with faculty and quality of interaction with other students. Overall fit of the regression model was assessed using R^2 values derived from linear regression analysis and Nagelkerke's R^2 from binomial regression.

Quantitative analysis was completed using IBM SPSS 20. For all analyses, the significance level was set at 0.05.

Analysis of Research Questions

The purpose of this study was to examine four research questions pertaining to participants in LLPs at Boston University. Quantitative and qualitative analyses were completed to explore the relationship between participation and academic success, engagement, and retention in the second year of college. Additional variables such as gender, race and ethnicity, academic preparation, and financial assistance were included to help determine if significant differences exist between LLP participants and students in on-campus housing.

Table 4.3

Frequency and Percent of LLP Housing Participants by LLP Type

	LLP Format Type					
	Honors (1)		Academic (2)		Special Interest (3)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender						
Female (0)	224	65.3%	1,729	58.9%	236	65.7%
Male (1)	119	34.7%	1,207	41.1%	123	34.3%
IPEDS Race/Ethnicity						
Non-Resident Alien (1)	24	7.0%	559	19.0%	109	30.4%
Missing (2)	30	8.7%	250	8.5%	26	7.2%
Hispanic/Latino (3)	10	2.9%	257	8.8%	38	10.6%
Asian (5)	43	12.5%	430	14.6%	36	10.0%
African American or Black (6)	5	1.5%	75	2.6%	11	3.1%
White (8)	215	62.7%	1,256	42.8%	129	35.9%
Other Race/Ethnicity (9)	16	4.7%	109	3.7%	10	2.8%
Chose LLP Participation (1)	324	94.5%	1,561	53.2%	146	40.7%
Total	343		2,936		359	

Research Question 1

The following section contains analyses pertaining to the first research question explored in this study. The first research question explored in this study is as follows:

Are there statistically significant differences in entering student characteristics, rates of retention, and 1st year GPA for students in the following populations?

- LLP participants vs. participants in traditional housing?
- By type of LLP (honors versus academic versus special interest)?
- Students who opt-in to LLPs vs. those who are placed?

When controlling for demographic and academic preparation indicators, is LLP versus traditional housing a significant predictor of attrition and/or first year GPA?

To determine if significant differences exist between the populations of students who participated in LLPs compared to those who lived in traditional on-campus housing, chi-square analyses were performed on categorical variables and independent samples t-tests and ANOVA were used to compare continuous variables. These analyses were repeated to explore differences between the populations by type of LLP and between students who opted in compared to those who were placed into an LLP. Analysis by variable is presented below.

Gender

Females represented a greater percentage of entering BU students than found in the national average of undergraduates enrolled at private nonprofit institutions, with 61.1% compared to 57.4% nationally (NSF, 2013). A comparison of LLP participants by gender shows little difference, with the proportion of female participants being slightly lower at 60.2% than the proportion of female non-participants at 61.3%. The percentage of students participating in LLPs did not

differ statistically by gender. When exploring differences between types of LLP, however, gender showed a greater disparity, with honors and special interest housing having over 65% female participants, compared academic LLPs with 58.9% female participants. This difference by gender was statistically significant, $\chi^2(3, n=15933) = 12.06, p=.007$.

In examining the proportion of students who opted in to LLP participation, the cohort of students that chose the LLP that they resided in was 58.4% female, whereas the cohort that was assigned to an LLP without choice was 62.4% female, an amount closer to BU's higher proportion of female students. This difference by gender was statistically significant, $\chi^2(1, n=3638) = 5.72, p=.017$. A contingency table showing differences by gender is presented in Table 4.4.

In total, gender proved to be significantly different, with LLPs having hosted a significantly higher proportion of males than traditional housing. Higher participation rates by males differs from the results reported in the 2007 NSLLP, the most recent multi-institutional profile of LLP participants (Inkelas, 2008). For institutions with a Carnegie Classification of Research University – Very High Research (RU/VH) that have more than 10 LLPs, females participate in LLPs in a statistically significantly greater proportion than in the comparison group of non-LLP participants, at a rate of 56.5% vs. 52.4%. In examining LLPs by type, academic LLPs, which contained a large Engineering LLP, attract a greater proportion of male participants than traditional housing, while the opposite is true

for honors and special interest LLPs. Given that males opted in to LLPs at a greater proportion than females, this difference cannot be ascribed to BU's housing practices, but may be explained by gender disparities in majors such as Engineering, which attract more male students, and therefore may have attracted a greater proportion of male LLP participants.

Table 4.4

LLP Status by Student Gender

	Female (0)		Male (1)	
LLP Participation				
No (0)	61.3%	(7,539)	38.7%	(4,756)
Yes (1)	60.2%	(2,189)	39.8%	(1,449)
Chi-square	1.55			
LLP Type				
Honors (1)	65.3%	(224)	34.7%	(119)
Academic (2)	58.9%	(1,729)	41.1%	(1,207)
Special Interest (3)	65.7%	(236)	34.3%	(123)
Traditional (4)	61.3%	(7,539)	38.7%	(4,756)
Chi-square	12.06 **			
LLP Choice				
Assigned (0)	62.4%	(1,002)	37.6%	(605)
Opted In (1)	58.4%	(1,187)	41.6%	(844)
Chi-square	5.72 *			

*p<.05 **p<.01 ***p<.001

Note: Number in parentheses indicates the total number of students in each category.

Race/Ethnicity and Citizenship

Federal definition of race and ethnicity includes nine categories based on students' self-reported status during the application and enrollment processes.

Following federal guidelines, students are reported in racial categories based on a predetermined hierarchy according to their responses to self-identification questions. Students who are nonresident aliens are removed from the population and reported in a separate category. Race and ethnicity are collected from the remaining domestic students. If students indicated that they are Hispanic or Latino, they will be reported in this category regardless of race. For students who do not indicate Hispanic or Latino ethnicity, results are reported based on the racial category they indicated as applicable from the following choices: American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; and White.

Students who select more than one racial category are reported as Two or More Races. Students who opt out of race and ethnicity reporting are categorized as Missing Data (NCES, 2015). To remove small populations from analysis, students coded as either American Indian or Alaskan Native or Native Hawaiian or Pacific Island were combined with the Two or More Races category to create a single category called Other Race/Ethnicity.

When comparing the distribution of students by race and ethnicity between students who participated in LLPs and those who did not, there is a statistically significant difference, $\chi^2(6, n=15933) = 53.53, p < .001$. Differences in the proportion of students by both type of LLP and by choice of participation also show statistically significant differences, $\chi^2(18, n=15933) = 169.19, p < .001$ and

χ^2 (6, n=15933) =79.68, $p<.001$, respectively. A contingency table showing differences by race, ethnicity and citizenship is presented in Table 4.5.

To better understand the significant differences within these ethnic categories, international status was separated from domestic race/ethnicity reporting. A comparison of LLP participation by international students showed that LLP participants had a higher proportion of international students (19.0%) than traditional housing participants (14.6%), which was a statistically significant difference, χ^2 (1, n=15933) =40.68, $p<.001$. This difference is in contrast to the findings of the 2007 NSLLP study, which showed no difference in the proportion of foreign-born students in LLPs versus traditional housing for Very High research institutions with over 10 programs (Inkelas, 2008). The differences between types of LLP showed a wider range of participation by international students, with honors LLPs having the lowest proportion of international students at 7.0%, and special interest LLPs having the highest at 30.4%. The difference in the proportion of international students participating in the different types of LLPs was statistically significant, χ^2 (3, n=15933) =113.24, $p<.001$.

Table 4.5

LLP Status by Race, Ethnicity and Citizenship

LLP Status	Non-Resident Alien (1)	Missing (2)	Hispanic / Latino (3)	Asian (5)	African American or Black (6)	White (8)	Other (9)
LLP Participation							
No (0)	14.6% (1,801)	7.8% (954)	9.7% (1,193)	13.3% (1,636)	3.1% (376)	47.3% (5,811)	4.3% (524)
Yes (1)	19.0% (692)	8.4% (306)	8.4% (305)	14.0% (509)	2.5% (91)	44.0% (1,600)	3.7% (135)
Chi-square	53.53 ***						
LLP Type							
Honors (1)	7.0% (24)	8.7% (30)	2.9% (10)	12.5% (43)	1.5% (5)	62.7% (215)	4.7% (16)
Academic (2)	19.0% (559)	8.5% (250)	8.8% (257)	14.6% (430)	2.6% (75)	42.8% (1,256)	3.7% (109)
Special Interest (3)	30.4% (109)	7.2% (26)	10.6% (38)	10.0% (36)	3.1% (11)	35.9% (129)	2.8% (10)
Traditional (4)	14.6% (1,801)	7.8% (954)	9.7% (1,193)	13.3% (1,636)	3.1% (376)	47.3% (5,811)	4.3% (524)
Chi-square	169.19 ***						
LLP Choice							
Assigned (0)	25.3% (406)	8.7% (140)	7.2% (115)	12.8% (206)	2.4% (39)	39.7% (638)	3.9% (63)
Opted In (1)	14.1% (286)	8.2% (166)	9.4% (190)	14.9% (303)	2.6% (52)	47.4% (962)	3.5% (72)
Chi-square	79.68 ***						

*p<.05 **p<.01 ***p<.001

Note: Number in parentheses indicates the total number of students in each category

When considering choice of LLP participation, the cohort of students that chose to participate in their LLP was 14.1% international, whereas the cohort that was assigned to an LLP without choice was 25.3% international. This difference was again statistically significant, $\chi^2 (1, n=3638) = 72.84, p < .001$. A contingency table showing differences by international status is presented in Table 4.6.

These results are consistent with and can be explained by University Housing procedures where continuing students receive preference for housing spaces, followed by incoming freshmen and transfers, for which there has been limited dedicated space. Students who are accepted to the university complete a housing interest application at which point they are moved into the housing assignment process. International students who may require more time to complete additional requirements for entry, including financial documentation and English proficiency, receive assignment to remaining housing space after upperclassmen and the majority of freshmen have received housing. This would include any open beds in undersubscribed LLPs, once all designated freshman housing space was filled. As with gender, any drivers associated with the academic success of international students may influence significant differences found when comparing different groups of LLP participants in this study.

Analysis of domestic students by racial or ethnic category provided less conclusive results. Comparing LLP participants with those in traditional housing, the proportion of Asian students showed the widest disparity, with 17.3% of LLP

participants compared to 15.6% of students in traditional housing. Overall, Asian students and those who did not report a race/ethnicity participated in LLPs at higher percentages than other racial and ethnic categories. The difference in the proportion of students by race/ethnicity participating in LLPs compared to those who did not was statistically significant, χ^2 (5, n=13440) =13.24, $p=.021$.

Table 4.6

LLP Status by Citizenship

LLP Status	Domestic (0)	Non-Resident Alien (1)
LLP Participation		
No (0)	85.4% (10,494)	14.6% (1,801)
Yes (1)	81.0% (2,946)	19.0% (692)
Chi-square	40.68 ***	
LLP Type		
Honors (1)	93.0% (319)	7.0% (24)
Academic (2)	81.0% (2,377)	19.0% (559)
Special Interest (3)	69.6% (250)	30.4% (109)
Traditional (4)	85.4% (10,494)	14.6% (1,801)
Chi-square	113.24 ***	
LLP Choice		
Assigned (0)	74.7% (1,201)	25.3% (406)
Opted In (1)	85.9% (1,745)	14.1% (286)
Chi-square	72.84 ***	
* $p<.05$ ** $p<.01$ *** $p<.001$		

Note: Number in parentheses indicates the total number of students in each category.

Differences in the proportion of domestic students by race and ethnicity also varied by LLP category, with these differences being statistically significant, χ^2 (15, n=13440) =54.26, $p<.001$. Honors LLPs had the highest proportion of White students, at 67.4%, compared to 52.8% of students in academic LLPs and 51.6%

of students in special interest LLPs. Asian students were represented in their highest proportion in academic LLPs, with 18.1% of students, compared to 13.5% in honors and 14.4% on special interest. Black and Hispanic students were represented in their largest proportion in special interest LLPs, at 4.4% and 15.2% respectively. The difference in the proportion of domestic students by race and ethnicity among those who chose to participate in LLPs compared to those who did not was statistically significant. Therefore, differences in race and ethnicity cannot be attributed to BU's housing placement practices, as there is no significant difference between the race and ethnicity of domestic students who opted in and those who were placed. A contingency table showing differences by racial and ethnic status is presented in Table 4.7.

Using an aggregated measure of LLP participants provides an opportunity for comparison across studies. The 2007 NSLLP, which provided aggregated information on 49 institutions with LLPs, offers different profiles depending on institution types. Nine participating institutions were classified as very high research (RU/VH) with more than 10 LLPs, including Colorado State University, Indiana University, Michigan State University, New York University, Ohio State University, University of Arizona, University of Maryland – College Park, University of Missouri – Columbia, and University of South Carolina. In comparison to the NSLLP survey population, the BU entering freshmen considered in this study had higher proportions of females, students who identified as Hispanic or Asian, and international students. Examining

differences between the LLP participants and non-participants at RU/VH institutions, NSLLP results showed a significantly higher proportions of female among LLP participants, and no differences among race/ethnicity or international birth. The profile of total LLP participants from all institution types, however, showed significant differences between LLP participants and non-participants similar to those found in this study found in this study, including a significantly higher proportion of Asian or Pacific Islander participants, and students who were foreign born (Inkelas, 2008).

Though sharing a Carnegie classification, differences between BU and many of the RU/VH NSLLP institutions may account for these demographic disparities. With the exception of New York University, the nine RU/VH participants were public institutions located predominantly in the south or mid-west (Inkelas, 2008). While public flagship institutions are arguably more like private institutions than community colleges or other public formats in terms of selectivity, public institutions differ in mission from private schools and can have lower rates of retention as a result. Astin (2005) noted that the primary driver of differences in outcome between public and private institutions can be attributed to the mix of characteristics and academic preparation of incoming students. Despite the potential differences between BU and the NSLLP participant institution demographics, research reflects that LLPs attract students with stronger academic preparation (Pike, 1999; Pasque and Murphy, 2005; Inkelas, 2008).

Table 4.7

LLP Status by Race/Ethnicity of Domestic Student

LLP Status	Missing (2)	Hispanic/Latino (3)	Asian (5)	African American or Black (6)	White (8)	Other (9)
LLP Participation						
No (0)	9.1% (954)	11.4% (1193)	15.6% (1,636)	3.6% (376)	55.4% (5,811)	5.0% (524)
Yes (1)	10.4% (306)	10.4% (305)	17.3% (509)	3.1% (91)	54.3% (1,600)	4.6% (135)
Chi-square	13.24 *					
LLP Type						
Honors (1)	9.4% (30)	3.1% (10)	13.5% (43)	1.6% (5)	67.4% (215)	5.0% (16)
Academic (2)	10.5% (250)	10.8% (257)	18.1% (430)	3.2% (75)	52.8% (1,256)	4.6% (109)
Special Interest (3)	10.4% (26)	15.2% (38)	14.4% (36)	4.4% (11)	51.6% (129)	4.0% (10)
Traditional (4)	9.1% (954)	11.4% (1,193)	15.6% (1,636)	3.6% (376)	55.4% (5,811)	5.0% (524)
Chi-square	54.26 ***					
LLP Choice						
Assigned (0)	11.7% (140)	9.6% (115)	17.2% (206)	3.2% (39)	53.1% (638)	5.2% (63)
Opted In (1)	9.5% (166)	10.9% (190)	17.4% (303)	3.0% (52)	55.1% (962)	4.1% (72)
Chi-square	6.99					

*p<.05 **p<.01 ***p<.001

Note: Number in parentheses indicates the total number of students in each category

Academic Preparation

T-tests were performed to determine if significant differences existed in academic preparation variables, including SAT–Combined and high school GPA, when comparing students in LLP populations and in traditional housing. Results of these t-tests are presented in Table 4.8.

Table 4.8:

T-test Results for Academic Preparation Variables Comparing Students Participating in LLPs with Those Participating in Traditional Housing

Variable	Academic Preparation <i>M (SD)</i>		<i>t</i>	<i>df</i>	<i>p</i>
	LLP Participant (1)	Traditional Housing (0)			
SAT – Combined	1948.82 (157.78)	1912.00 (157.78)	12.48	15912	.000
High School GPA	3.61 (.29)	3.54 (.29)	13.43	6135.9	.000

There was a statistically significant difference using SAT – Combined, $t(15912) = 12.48$, $p < .001$, with LLP students having a higher average score (1948.82) than students in traditional housing (1912.00). In addition, there was a statistically significant difference using high school GPA, $t(6135.9) = 13.43$, $p < .001$, with LLP students having a higher average (3.61) than students in traditional housing (3.54).

ANOVA was employed to test for significant differences in SAT – Combined and HS GPA among the three formats and students in traditional housing. Summary statistics of the analysis are shown in Table 4.9. Looking at SAT-Combined, there was a statistically significant difference between groups as determined by

one-way ANOVA, $F(3, 15910) = 169.43, p < .001$. A Tukey post-hoc test revealed that the mean SAT-Combined score for honors LLP participants (2096.18) was statistically significantly higher than the mean score for students in academic LLPs (1935.54, $p < .001$), students in special interest LLPs (1916.30, $p < .001$) and students in traditional housing (1912.00, $p < .001$). In addition, the SAT-Combined score for academic LLP participants was significantly higher than that of students in traditional housing ($p < .001$). There were no statistically significant differences between the scores of students in academic LLPs and those in special interest LLPs ($p = .118$) or students in special interest LLPs and those in traditional housing ($p = .955$).

Table 4.9

One-way ANOVA of SAT – Combined and High School GPA by Type of LLP

Variable	LLP Type	N	Mean	SD	F	Sig.
SAT - Combined	Honors (1)	343	2096.18	161.12	169.43	.000
	Academic (2)	2,933	1935.54	148.50		
	Special Interest (3)	357	1916.30	154.83		
	Traditional Housing (4)	12,281	1912.00	155.78		
HS GPA	Honors (1)	342	3.82	.21	120.94	.000
	Academic (2)	2,921	3.59	.28		
	Special Interest (3)	358	3.57	.29		
	Traditional Housing (4)	12,241	3.54	.30		

Uses Harmonic Mean Sample Size = 651.58 (SAT) and 651.326 (HS GPA) due to unequal sample sizes. Type I error levels are not guaranteed.

One-way ANOVA was also used to explore differences in high school GPA between students participating in the four housing types. Again, there was a statistically significant difference between the groups, $F(3, 15858) = 120.94$,

$p < .001$). A Tukey post-hoc test revealed that the mean high school GPA for honors LLP participants (3.82) was statistically significantly higher than the mean GPA for students in academic housing (3.59, $p < .001$), students in special interest housing (3.57, $p < .001$) and students in traditional housing (3.54, $p < .001$). In addition, the mean high school GPA for academic LLP participants was significantly higher than that of students in traditional housing ($p < .001$). There were no statistically significant differences between the scores of students in academic LLPs and those in special interest LLPs ($p = .499$) or students in special interest LLPs and those in traditional housing ($p = .192$).

T-tests were performed to determine if there were significant differences in the SAT - Combined and high school GPA of students who opted for LLP participation compared to those who were placed into an LLP that was not their first housing choice. Results of these t-tests are presented in Table 4.10.

There was a statistically significant difference in mean SAT – Combined between students who chose to participate in LLPs and those who did not, $t(3548.0) = 8.93$, $p < .001$. Students who chose LLP participation had a higher average score (1969.17) than students who were placed into the LLP (1923.04). In addition, there was a statistically significant difference when comparing the mean high school GPA between these populations, $t(3619) = 7.21$, $p < .001$, with students who chose LLP participation having a higher average (3.64) than students who were placed into LLPs (3.57).

Table 4.10

T-test Results for Academic Preparation Variables Comparing Students

Receiving Choice of LLP Compared to Those Assigned to an LLP

Variable	Academic Preparation Mean (SD)		<i>t</i>	<i>df</i>	<i>p</i>
	Assigned to LLP (0)	Chose LLP (1)			
<i>Including Honors LLP Participants</i>					
SAT – Combined	1923.04 (148.73)	1969.17 (161.73)	8.93	3548.0	.000
High School GPA	3.57 (.29)	3.64 (.28)	7.21	3619	.000
<i>Excluding Honors LLP Participants</i>					
SAT – Combined	1923.21 (147.56)	1942.96 (150.31)	3.80	3288	.000
High School GPA	3.57 (.29)	3.60 (.28)	3.52	3277	.000

Kilachand Honors College (KHC), representing the majority of the honors LLP students, requires a higher threshold of academic performance for participation as well as residence in a specific dormitory. To remove this effect from analysis, the previous t-tests were repeated comparing students in academic and special interest LLP participants to those in traditional housing. There was a statistically significant difference in mean SAT – Combined between students who chose LLP participation (1942.96) and those students who received a placement (1923.21), $t(3288) = 3.80, p < .001$. In addition, there was a statistically significant difference between mean high school GPAs, $t(3277) = 3.52, p < .001$, with LLP students having a higher average (3.60) than students in traditional housing (3.57).

Overall, LLPs attracted students with stronger academic profiles, defined as higher average SAT and high school GPA, which is consistent with the NSLLP

profile (Inkelas, 2008). When these data were disaggregated, honors students showed the strongest academic preparation overall, and academic LLP students showed significantly stronger academic preparation than students in traditional housing. While students assigned to LLPs had academic profiles that were in line with students in traditional housing, students who chose LLPs were significantly stronger in academic preparation, even when removing honors LLP students from the analysis. Therefore, differences in the academic preparation of students in the academic LLPs cannot be attributed to BU's housing policies.

Financial Resources

Indication of a student's level of financial support was operationalized in this analysis through the use of several variables, include receipt of Pell grants, presence of unmet need (the difference between what a family can pay, subsidized by scholarships, grant aid, or loans, and the cost to attend the institution), and type of financial assistance received. There are three types of student aid included in the analysis: need-based aid, merit aid, and student loan aid. A subset of need-based aid, Pell Grant aid, is included to identify students from lower socioeconomic backgrounds. In total, 10,244 students, or 64.3% of the students in this study, submitted a FAFSA as application for assistance.

Unmet Financial Need

One indicator of a student's Financial Resources for college is the ability to meet the cost of education through personal contribution and financial assistance.

Unmet need is the difference between the student's demonstrated amount of financial need less any grants, scholarships, or non-private loans received.

Unmet need is calculated for domestic students who submitted a FAFSA to the University. In total, 64.3% of students considered in this study applied for financial aid. Of these, 42.8% had their need met when considering merit, need-based, and loan aid.

When considering only those students who applied for financial aid in this analysis, students participating in LLPs did not differ significantly from those students in traditional housing in the percent of students with unmet need.

In examining the differences among the four types of housing, only honors LLPs had a higher percentage of students without unmet need (70.0%) than with unmet need. The four housing types differed significantly when considering the proportion of students with unmet need, $\chi^2(3, n=10244) = 33.16, p < .001$. When the effect of honors LLP students is removed, the three remaining housing types again demonstrated significant differences in the proportion of students with unmet need, with special interest LLPs having the highest proportion of students with unmet need (52.8%), $\chi^2(2, n=9974) = 14.56, p = .001$. There were no statistically significant differences in the proportion of students with unmet need between students who opted into LLP participation and those who were assigned to the house, both including honors LLPs and excluding them from the analysis. Results for chi-square analyses are shown in Table 4.11.

In summary, while the proportion of students with unmet need was not significantly different between LLP participants and students in traditional housing, there were significant differences when examining type of housing. Honors LLPs and Special Interest LLPs represent either end of the need spectrum, with 70.0% and 47.2% of students having had their total need met, respectively.

Need-Based Grant Aid

Need-based financial aid is assistance in the form of scholarship, grants, or loans from the institution or government that is used to fulfill financial need that a student is determined to have. Student grant aid, which does not have to be repaid by the student, is considered separately from loan aid in this study, although both may go to meet need. Among the entering students who applied for financial aid in this analysis, students participating in LLPs differed significantly from those who did not when compared on percent of students receiving need-based grant aid, with a higher percentage of LLP students receiving grants (61.3%) than students in traditional housing (58.4%), $\chi^2(1, n=10244) = 6.71, p=.010$.

Table 4.11

Chi-square Results for LLP Status by Indicator of Unmet Financial Need for Students Who Applied for Financial Aid

LLP Status	With Unmet Need (0)		Without Unmet Need (1)	
LLP Participation				
No (0)	42.3%	(3,316)	57.7%	(4,523)
Yes (1)	44.4%	(1,069)	55.6%	(1,336)
Chi-square	3.47			
LLP Type				
Honors (1)	30.0%	(81)	70.0%	(189)
Academic (2)	45.6%	(885)	54.4%	(1,055)
Special Interest (3)	52.8%	(103)	47.2%	(92)
Traditional (4)	42.3%	(3,316)	57.7%	(4,523)
Chi-square	33.16 ***			
Chi-square (<i>exc. Honors</i>)	14.56 **			
LLP Choice				
Assigned (0)	46.3%	(435)	53.7%	(504)
Opted In (1)	43.2%	(634)	56.8%	(832)
Chi-square	2.20			

*p<.05 **p<.01 ***p<.001

Note: Number in parentheses indicates the total number of students in each category.

Examining the differences among the four types of housing, students in both academic and special interest LLPs had a higher percentage of students with need-based grants (63.4% and 67.2%, respectively) than students in traditional housing (58.4%), while students in honors LLPs had the lowest proportion of all four housing types (42.6%). This difference was statistically significant, χ^2 (3,

$n=10244$) =51.95, $p<.001$. When honors LLPs were excluded from analysis, the differences were again significant, χ^2 (2, $n=9974$) =20.92, $p<.001$.

Looking at placement choice, there was no significant difference in the proportion of financial aid applicants that received need-based aid between students who chose LLP participation (60.4%) and those who were placed in (62.8%), χ^2 (1, $n=2405$) =1.47, $p=.226$. Results for Chi-square analyses are shown in Table 4.12.

Pell Grants

Federal grants are awarded to students on the basis of need and typically do not require repayment. Among these are Pell grants, which are generally awarded to students with high financial need, and are therefore a type of need-based grant aid. For entering students included in this analysis who applied for financial aid, the proportion of Pell recipients did not differ significantly among students who participated in LLPs (23.4%) and those who did not (23.2%).

Table 4.12

Chi-square Results for LLP Status by Receipt of Need-Based Grant Aid for Students Who Applied for Financial Aid

LLP Status	Without Need-Based Aid (0)		With Need-Based Aid (1)	
LLP Participation				
No (0)	41.6%	(3,264)	58.4%	(4,575)
Yes (1)	38.7%	(930)	61.3%	(1,475)
Chi-square	6.71	**		
LLP Type				
Honors (1)	57.4%	(155)	42.6%	(115)
Academic (2)	36.6%	(711)	63.4%	(1,229)
Special Interest (3)	32.8%	(64)	67.2%	(131)
Traditional (4)	41.6%	(3,264)	58.4%	(4,575)
Chi-square	51.95	***		
Chi-square (<i>Exc. Honors</i>)	20.92	***		
LLP Choice				
Assigned (0)	37.2%	(349)	62.8%	(590)
Opted In (1)	39.6%	(581)	60.4%	(885)
Chi-square	1.47			
*p<.05 **p<.01 ***p<.001				

Note: Number in parentheses indicates the total number of students in each category.

In examining the differences among the four types of housing, students who applied for financial aid in honors LLPs had the lowest percentage of students with Pell grants (13.3%). The different housing types varied significantly when considering the proportion of student participants who applied for financial aid and received Pell awards. $\chi^2(3, n=10244) = 17.47, p < .001$. The honors LLP population had significantly higher mean Combined - SAT and high school GPA scores as well as lower proportion of Pell recipients, which is consistent with research highlighting the link between SES and academic preparation.

When comparing students who chose to participate in LLPs with those who were assigned to the LLP, there were no significant differences in the proportion of Pell recipients between the two groups. Results for chi-square analyses are shown in Table 4.13.

Table 4.13

Chi-square Results for LLP Status by Pell Status for Students Who Applied for Financial Aid

LLP Status	Without Pell (0)		With Pell (1)	
LLP Participation				
No (0)	76.8%	(6,020)	23.2%	(1,819)
Yes (1)	76.6%	(1,843)	23.4%	(562)
Chi-square	0.03			
LLP Type				
Honors (1)	86.7%	(234)	13.3%	(36)
Academic (2)	75.5%	(1,465)	24.5%	(475)
Special Interest (3)	73.8%	(144)	26.2%	(51)
Traditional (4)	76.8%	(6,020)	23.2%	(1,819)
Chi-square	17.47 ***			
LLP Choice				
Assigned (0)	75.8%	(712)	24.2%	(227)
Opted In (1)	77.1%	(1,131)	22.9%	(335)
Chi-square	0.56			
*p<.05 **p<.01 ***p<.001				

Note: Number in parentheses indicates the total number of students in each category.

Merit Aid

Unlike need-based aid, merit aid is available to all BU applicants regardless of whether they requested financial aid. Awarding of this type of aid is based on academic or other types of merit and the student is not required to pay back the

award upon leaving the institution. For entering students in this analysis, 2,932 students, or 18.4%, received merit aid. Among these students, those participating in LLPs differed significantly from students who did not participate when compared on proportion of students receiving merit aid. A higher percentage LLP students received scholarships (22.2%), compared to students in traditional housing (17.3%), $\chi^2 (1, n=15933) = 44.22, p < .001$.

In examining the differences among the four types of housing, the majority of students in honors housing (60.1%) received some form of merit, well above the proportion of students in other LLPs or traditional housing. When removing students in Honors LLPs from the analysis, the difference between the proportion of students participating in LLPs that received merit aid (18.2%) and the proportion of merit recipients in traditional housing (17.3%) was not significant.

Removing honors students from the analysis, there was a significant difference in the proportion of students with merit aid between students who chose LLP participation (21.1%) and those who were placed in (15.1%), $\chi^2 (1, n=3295) = 19.73, p < .001$. Because of the large difference in the proportion of international students among students who chose LLPs and those who were placed in, a chi-square analysis was performed to see if there were any differences in the proportion of international students and domestic students receiving merit aid, again omitting students in honors LLPs. The results showed a significant difference in the proportion of students receiving merit aid, with international

students having a lower percentage of merit aid recipients (4.9%) than domestic students (19.9%), $\chi^2 (1, n=15590) = 324.10, p < .001$.

Results for chi-square analyses are shown in Table 4.14. To summarize, consistent with the lower proportion of unmet need and need-based aid among the honors LLP participants, this LLP also had a significantly higher proportion of students who received merit aid. When honors LLP students were removed from the analysis, differences in the proportion of students with merit aid were no longer significant between LLP participants and students in traditional housing, as well as between the remaining LLP types. The population that chose LLP participation, however, still had a significantly higher proportion of students receiving merit aid. This difference may be explained, in part, by the practice of placing students into LLPs, with 46.8% and 59.3% of students having been placed into academic and special interest LLPs, respectively. Placement of students, who are often international, and therefore less likely to be awarded aid, may act to dilute the proportion of merit recipients in these groups.

Table 4.14

Chi-square Results for LLP Status by Merit Aid Status

LLP Status	Without Merit (0)		With Merit (1)	
<i>LLP Participation</i>				
No (0)	82.7%	(10,169)	17.3%	(2,126)
Yes (1)	77.8%	(2,832)	22.2%	(806)
Chi-square	44.22	***		
<i>LLP Participation - Excluding Honors LLP Students</i>				
No (0)	82.7%	(10,169)	17.3%	(2,126)
Yes (1)	81.8%	(2,695)	18.2%	(600)
Chi-square	1.52			
<i>LLP Type</i>				
Honors (1)	39.9%	(137)	60.1%	(206)
Academic (2)	81.6%	(2,395)	18.4%	(541)
Special Interest (3)	83.6%	(300)	16.4%	(59)
Traditional (4)	82.7%	(10,169)	17.3%	(2,126)
Chi-square	407.40	***		
Chi-square (<i>Exc. Honors</i>)	2.40			
<i>LLP Choice</i>				
Assigned (0)	85.0%	(1,366)	15.0%	(241)
Opted In (1)	72.2%	(1,466)	27.8%	(565)
Chi-square	85.52	***		
<i>LLP Choice - Excluding Honors LLP Students</i>				
Assigned (0)	84.8%	(1,348)	15.1%	(240)
Opted In (1)	78.9%	(1,347)	21.1%	(360)
Chi-square	19.73	***		
*p<.05 **p<.01 ***p<.001				

Note: Number in parentheses indicates the total number of students in each category.

Student Loans

Student loans are available from federal, state and private sources to help finance a student's education. Unlike grant aid, loans require repayment by the student. In this analysis, only federal and state loans, which are packaged as

part of a student's total aid award, are considered. Federal or state loans are a common form of financial assistance. In 2012-2013, 61% of undergraduate students in private nonprofit four-year institutions received loans (Kena *et al.*, 2015).

Of the entering students in this analysis, 7,328, or 46.0% received student loans from federal or state sources. Among those students who applied for financial aid, there was no significant difference in the proportion of students with loans between students in LLPs (71.7%) and those in traditional housing (70.0%), $\chi^2(1, n=10244) = 2.51, p = .113$. In examining the differences among students who applied for aid in the four types of housing, honors LLPs had a lower percentage of students with loans (59.3%) than the other forms of housing. The four housing types differed significantly when considering the proportion of students with loan aid, $\chi^2(3, n=10244) = 19.75, p < .001$.

Looking at placement choice, there was no significant difference in the proportion of students who applied for aid that received loan aid among students who chose LLP participation (69.8%) and those who were placed in (70.4%), $\chi^2(1, n=2405) = .10, p = .749$.

Results for chi-square analyses are shown in Table 4.15.

Table 4.15

Chi-square Results for LLP Status by Loan Status for Students Who Applied for Financial Aid

LLP Status	Without Loans (0)		With Loans (1)	
<i>LLP Participation</i>				
No (0)	28.3%	(2,219)	71.7%	(5,620)
Yes (1)	30.0%	(721)	70.0%	(1,684)
Chi-square	2.51			
<i>LLP Type</i>				
Honors (1)	40.7%	(110)	59.3%	(160)
Academic (2)	28.7%	(556)	71.3%	(1,384)
Special Interest (3)	28.2%	(55)	71.8%	(140)
Traditional (4)	28.3%	(2,219)	71.7%	(5,620)
Chi-square	19.75 ***			
Chi-square (<i>exc. Honors</i>)	.10			
<i>LLP Choice</i>				
Assigned (0)	29.6%	(278)	70.4%	(661)
Opted In (1)	30.2%	(443)	69.8%	(1,023)
Chi-square	.10			
*p<.05 **p<.01 ***p<.001				

Note: Number in parentheses indicates the total number of students in each category.

Overall, significant differences in financial resources between LLP types were driven mainly by students participating in honors LLPs. This LLP type had a larger percentage of students with merit aid, with significantly less students meeting need through Pell grants or loan aid. These results are consistent with the findings of the 2007 NSLLP, where 80.3% of honors LLP students received non-need based scholarships, compared to 40.0% of students in traditional housing, making these students less reliant on need-based grant aid and loans (Inkelas, 2008). Academic and special interest LLPs had a greater proportion of

students who were awarded need-based grant aid. This difference, however, was not driven by BU's Housing policies, as there was no significant difference in the proportion of aid recipients receiving need-based grants among students who opted in to LLPs as opposed to those who were assigned placement.

Retention

Of the entering students considered in this analysis, 92.8% re-enrolled at BU for the fall semester of their sophomore year. A chi-square analysis was completed to test for differences in retention between students who participated in LLPs and those who resided in traditional housing. Comparing students from these two residence types, there was a significant difference between students in LLPs (94.5%) and those in traditional housing (92.3%) when considering the proportion of students retained to their second year, $\chi^2 (1, n=15933) = 19.64, p < .001$.

Additional analysis exploring the difference between housing types showed that honors and academic LLP residents had the highest rates of retention (94.5% and 94.8%, respectively), while students in special interest LLPs and in traditional housing had lower retention rates (91.9% and 92.3%, respectively).

The difference between housing types were significant when considering retention to the second year, $\chi^2 (3, n=15933) = 23.58, p < .001$. Whether students chose to participate in the LLP or were assigned to the residence was not significantly related to first year retention. Results of the chi-square analysis are shown in Table 4.16.

Table 4.16

Chi-square Results for Retention by LLP Status

LLP Status	Not retained (0)		Retained (1)	
<i>LLP Participation</i>				
No (0)	7.7%	(945)	92.3%	(11,350)
Yes (1)	5.5%	(201)	94.5%	(3437)
Chi-square	19.64	***		
<i>LLP Type</i>				
Honors (1)	5.5%	(19)	94.5%	(324)
Academic (2)	5.2%	(153)	94.8%	(2,783)
Special Interest (3)	8.1%	(29)	91.9%	(330)
Traditional (4)	7.7%	(945)	92.3%	(11,350)
Chi-square	23.58	***		
<i>LLP Choice</i>				
Assigned (0)	5.5%	(88)	94.5%	(1,519)
Opted In (1)	5.6%	(113)	94.4%	(1,918)
Chi-square	.01			
*p<.05 **p<.01 ***p<.001				

Note: Number in parentheses indicates the total number of students in each category

Academic Achievement

To analyze differences in academic achievement during the first year of college, cumulative GPA, including the fall and spring semesters of a student's first year was used. For the entering students included in this analysis, the average first year GPA was 3.04. There was a significant difference in the average first year GPA between students who participated in LLPs (3.15) and those in traditional housing (3.01), $t(15931) = 12.76, p < .001$. Comparing the average GPA by type of housing, honors student participants had the highest average first year GPA (3.50) followed by students in academic LLPs (3.11). Again, there was a statistically significant difference between the groups, $F(3, 15929) = 106.53, p$

<.001. A Tukey post-hoc test revealed that the average first year GPA achieved by honors LLP participants was statistically significantly higher than that of students in academic LLPs ($p < .001$), students in special interest LLPs (3.07, $p < .001$), and students in traditional housing (3.01, $p < .001$). The first year GPA achieved by students in academic LLPs was also statistically significantly higher than that of students in traditional housing ($p < .001$). There were no statistically significant differences in the average first year GPA between students in special interest LLPs and those in academic LLPs ($p = .500$) or with students in traditional housing ($p = .195$).

In comparing students who chose LLP participation with those who were assigned into LLP housing, there was a statistically significant difference in first year GPA, with those who chose LLPs having a higher average (3.21) than those who did not (3.07), $t(3636) = 7.49, p < .001$. When removing honors LLP students from the analysis, the majority of which have assigned housing as part of their participation in Kilachand Honors College, the first year GPA of students who chose LLP participation (3.14) is still statistically significantly higher than those who were placed into LLPs (3.07), $t(3293) = 3.89, p < .001$. Mamisheishvili (2012) noted that international students face additional barriers to academic success, including adapting the American educational system. Since international students were overrepresented in the population of students placed in LLPs, a t-test was performed comparing the first year GPA of international students who chose to participate in LLPs and those that were placed. The first

year GPA of international students who chose LLP participation (3.03) is statistically significantly higher than those who were placed into LLPs (2.94), $t(690) = 1.99, p = .047$. The results of the t-test and one-way ANOVA analyses are available in Tables 4.17 and 4.18, respectively.

Table 4.17

T-test Results for Average First Year GPA Comparing Students by LLP

Participation and Choice

Variable	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
<i>LLP Indicator – Including Honors LLP</i>						
Traditional Housing (0)	12,295	3.01	0.57	12.76	15931	.000
LLP Participants (1)	3,638	3.15	0.54			
<i>LLP Indicator – Excluding Honors LLP</i>						
Traditional Housing (0)	12,295	3.01	0.57	8.92	15588	.000
LLP Participants (1)	3,295	3.11	0.54			
<i>Received Choice of LLP – Including Honors LLP</i>						
No (0)	1,607	3.07	0.55	7.49	3636	.000
Yes (1)	2,031	3.21	0.53			
<i>Received Choice of LLP – Excluding Honors LLP</i>						
No (0)	1,588	3.07	0.55	3.89	3293	.000
Yes (1)	1,707	3.14	0.53			
<i>Received Choice of LLP – International only</i>						
No (0)	406	2.94	0.59	1.99	690	.047
Yes (1)	286	3.03	0.58			

Table 4.18

One-way ANOVA Results of 1st Year GPA by Type of LLP

Variable	LLP Type	N	Mean	SD	F	Sig.
Unmet Need	Honors (1)	343	3.50	.44	106.53	.000
	Academic (2)	2,936	3.11	.53		
	Special Interest (3)	359	3.07	.57		
	Traditional Housing (4)	12,295	3.01	.57		

Uses Harmonic Mean Sample Size = 653.29 due to unequal sample sizes. Type I error levels are not guaranteed.

In summary, LLP students had stronger academic preparation than students in traditional housing, which is consistent with the profile produced in the 2007 NSLLP (Inkelas, 2008). Students who chose LLP participation had statistically significantly higher first year GPAs than those placed into housing. This relationship was consistent when honors LLP students were removed from analysis, indicating that the BU Housing practice of placing students into LLPs is not the driver of increased GPA of LLP participants. Overall, these differences were driven largely by the participants of honors and academic LLPs. Students in special interest LLPs had an academic profile that was more similar to students in traditional housing.

Regression Analysis – 1st Year Retention by Demographic
and Pre-College Preparation Factors

Binary logistic regression modelling was employed to understand the relationship between demographics, academic preparation, financial resources, LLP participation and retention. In particular, regression modelling allows for

determination of significant relationships between dependent and independent variables, net of the effects of other independent variables, making it a useful tool for understanding how pre-college or first year variables interact with student success. A correlation matrix of all variables in these analyses is available in Appendix 5.

Table 4.19 shows the results of the binary regression model, which was statistically significant, $\chi^2(18) = 83.51, p < .001$. Of the total 15,933 records, 15,844 (99.4%) were included in the analysis and 89 (0.6%) were missing cases. The explanatory value of the model was low (Nagelkerke $R^2 = .01$), suggesting that demographic, academic preparation and financial resources, and LLP choice alone are not strong predictors of retention in BU students. Gender was not related to difference in retention. Among the race/ethnicity categories, only Asian self-identification had a significant relationship with retention. Students who identified as Asian were 1.58 times, or 58% more likely to be retained as students who identified as White. The differences between Non-Resident Aliens, Black, Hispanic, and other race/ethnicity students and White students were not statistically significant.

Looking at the pre-college academic preparation variables, both high school GPA and SAT - Combined score had significant relationships with retention. Each point increase in a student's high school GPA increased the odds of being retained by 1.27. SAT score, however, showed a negative relationship with

retention. For each 100 point increase in a student's SAT - Combined score, that student was 6% less likely to be retained, keeping all other variables constant.

Of the financial resource variables included, indication of unmet need and receipt of need-based aid and merit aid had significant relationships with retention.

Specifically, students with no unmet need were 20% more likely to be retained than students with unmet need, controlling for all other variables in the analysis.

Merit recipients were 1.29 times, or 29%, more likely to be retained as non-recipients. Need-based aid receipt provided an even greater effect. Need-based aid recipients were 1.38 times, or 38% more likely to be retained as non-recipients. Indicators of Pell receipt and student loan aid did not have a significant relationship with retention.

Looking at LLP choice, participation in academic LLPs had a significant relationship with retention. Students who participated in academic LLPs were 1.51 times, or 51% more likely to be retained than those in traditional housing. Whether or not a student received his or her choice of LLP was not significantly related to retention.

Table 4.19

Binary Logistic Regression Analysis of Retention by Gender, Race/Ethnicity,
Academic and Financial Resources, and LLP Participation

	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	.10	.07	.125	1.11
Race/Ethnicity				
Non-Resident Alien	.14	.10	.172	1.15
Unknown/Missing	-.06	.11	.598	0.94
Hispanic	-.07	.11	.516	0.93
Asian	.46	.11	.000	1.58
Black	.21	.21	.312	1.24
Other Ethnicity	-.25	.14	.079	0.78
Academic Preparation				
SAT - Combined (00s)	-.06	.02	.010	0.94
High School GPA	.24	.11	.038	1.27
Financial Resources				
Unmet Need Indicator	.18	.09	.045	1.20
Pell Indicator	.08	.11	.471	1.08
Merit Indicator	.26	.09	.005	1.29
Need-Based Indicator	.32	.11	.003	1.38
Student Loan Indicator	-.08	.09	.323	0.92
LLP Type/Choice				
Honors LLP	.36	.28	.206	1.43
Academic LLP	.41	.12	.001	1.51
Special Interest LLP	-.01	.21	.949	0.99
LLP Choice Indicator	-.05	.15	.723	0.95
Constant	2.43	.52	.000	11.32

Note: Nagelkerke $R^2 = .01$, $\chi^2 (18) = 83.51$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Though honors students had a statistically significantly higher retention rate than other LLP participants and students in traditional housing, indication of participation in honors LLPs was not a significant predictor of retention when

controlling for all other variables. Only academic LLP participation, in comparison to residing in traditional housing, showed a significant relationship with retention when controlling for precollege and financial resource variables. Compared to other research, this result is consistent with the work of Stassen (2003) who noted that general education LLPs were related to increased retention in comparison to traditional housing, while participation in honors LLPs showed an inconsistent relationship. Though the significance of the relationship may be driven in part by the relative size of the academic LLP in comparison to the other LLPs, these results may also suggest that the academic preparation and financial resources available to honors LLP students contribute to their increased rate of retention, whereas residing in an academic LLP either directly or indirectly supports student retention.

Regression Analysis – First Year GPA by Demographic and Pre-College Preparation Factors

Linear regression was employed to understand how LLP participation, demographic variables, and academic and financial resources at the time of entry to college might affect a student's cumulative first year GPA. Table 4.20 shows the results of the linear regression model, which was statistically significant, $R^2 = .204$, $F(18, 15825) = 225.54$, $p < .001$. Of the total 15,933 records, 15,843 (99.4%) were included in the analysis and 90 (0.6%) were missing cases.

Table 4.20

Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity,
Academic and Financial Resources, and LLP Participation and Choice

	Unstandardized Coefficients		Standardized Coefficients		
	B	S.E.	Beta	t	Sig.
Constant	-.16	.07		-2.34	.019
Gender (1, Male)	-.07	.01	-.06	-8.21	.000
Race/Ethnicity					
Non-Resident Alien	-.07	.01	-.05	-5.62	.000
Unknown/Missing	-.01	.02	-.01	-.97	.334
Hispanic	-.09	.01	-.05	-5.98	.000
Asian	-.14	.01	-.09	-11.15	.000
Black	-.14	.02	-.04	-5.70	.000
Other Ethnicity	-.09	.02	-.03	-4.59	.000
Academic Preparation					
SAT - Combined (00s)	.07	.00	.21	25.55	.000
High School GPA	.51	.01	.27	34.07	.000
Financial Resources					
Unmet Need Indicator	-.03	.02	-.03	-1.81	.070
Pell Indicator	-.04	.01	-.02	-2.85	.004
Merit Indicator	.11	.01	.08	9.96	.000
Need-Based Indicator	.04	.02	.03	2.30	.021
Student Loan Indicator	-.01	.01	.00	-.48	.629
LLP Type/Choice					
Honors LLP	.11	.03	.03	3.30	.001
Academic LLP	.04	.01	.03	2.90	.004
Special Interest LLP	.03	.03	.01	1.00	.319
LLC Choice Indicator	.04	.02	.02	2.18	.029

Note: $R^2 = .204$, $F(18, 15825) = 225.54$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Unlike retention, gender was related to difference in first year GPA when controlling for all other variables in the equation. Males had a small but significant difference in GPA, with an average difference that was .07 points

lower than GPAs of female students. Among the race and ethnicity categories, all except for unknown/missing showed a significant relationship to first year GPA ($p < .001$). Students who identified as Asian and Black had the highest differences, with GPAs that were, on average, .14 points lower than students who identified as White. Students who identified as Non-Resident Alien, Hispanic, and Other Race/Ethnicity, had GPAs that were, on average, .07, .09, and .09 points lower than students who identified as White, respectively, again representing significant but comparatively smaller differences.

The pre-college academic preparation variables, SAT - Combined and high school GPA were both significantly related with first year GPA when controlling for all other variables. Each 100-point increase in a student's SAT - Combined score is associated with a .07-point increase in first year GPA. Each point increase in high school GPA is associated with a .51-point increase in first year GPA.

Of the financial resources indicators included, receipt of merit and need-based aid were again significant in relation to first year GPA when controlling for all other variables. Specifically, merit aid recipients had first year GPAs that were, on average, .11 points higher than non-recipients. This finding fits with institutional policy, which requires that merit aid recipients maintain a certain GPA in order to retain their scholarship. Need-based aid recipients, for whom there are no GPA requirements to retain aid, were, had GPAs that were, on

average, .04 points higher than non-recipients. Pell receipt was also significantly related to first year GPA, with Pell recipients having a first year GPA that was, on average, .04 points lower than non-recipients. Indicators of unmet need and student loan aid were not significantly related to first year GPA.

In comparing students by type of LLP to participation in traditional housing, participation in both honors and academic LLPs were significantly related to first year GPA when controlling for all other variables. Specifically, students who participated in honors LLPs had the largest difference, with GPAs, that were, on average, .11 points higher than students in traditional housing. This was followed by students in academic LLPs and students who opted into LLPs, who both had first year GPAs that were, on average, .04 points higher than students in traditional housing and students who were placed in to housing.

Academic achievement among honors participants is consistent with other research on honors LLP participants, in comparison to students in traditional housing (Stassen, 2003, Inkelas, 2008). Among the BU participants, two potential explanations exist for this difference. First, KHC students are the recipients of extensive academic support, including designated tutors, staff advisors, for-credit classes, and academic programming. Using Astin's (1993) framework, when controlling for student pre-college and financial inputs, differences in the environment of these students, compared to those in traditional housing, result in the output of stronger first year GPA. Alternatively, or

additionally, this finding may be related to the significant difference in the proportion of honors LLP students with merit aid. Maintenance of merit scholarships includes credit hour completion and minimum GPA requirements, which can be as high as 3.50 for certain scholarships (BU Financial Assistance, 2015). Though receipt of merit aid is a variable that has been controlled for in the regression equation, the effect of this financial incentive on a student's motivation toward academic achievement may represent an intervening factor that is unmeasured in this analysis.

Overall, except for a few commonalities, different variables proved to be significant predictors of retention and first year GPA of entering students when controlling for all other variables. Variables that were significantly and positively related to both retention and first year GPA include high school GPA, receipt of merit or need-based aid, and participation in an academic LLP. While identification as Asian was also significantly related to both retention and first year GPA, these students were more likely to be retained than students who identified as White, but would also have, on average, a lower GPA than students who identified as White.

SAT - Combined showed a negative relationship with retention, but a positive one with first year GPA, suggesting that while this measure is a good predictor of student academic performance, students with stronger scores may be transferring out more frequently. While pre-college perceptions were not in

scope for this study, a potential driver of student transfer may be whether or not BU was the first choice for attendance of these students. Additional research is required to determine what factors motivate departure of better academically prepared students.

Research Question 2

The following section contains analyses pertaining to the second research question explored in this study. The question is as follows:

Are there statistically significant differences in the levels of academic and social integration between LLP and traditional housing students?

Between students participating in different LLP formats? Between students in LLPs by choice versus placement? When adding controls for levels of student perception, is LLP participation a significant factor?

As in the previous section, chi-square, t-tests and ANOVA were employed to determine if significant differences existed between the populations of students who participated in LLPs compared to those who live in traditional on-campus housing. These analyses were repeated to explore differences between the populations by type of LLP and between students who opted in compared to those who were placed into an LLP. Analyses by variable are presented below.

Undeclared Major

Of the 15,933 entering students considered in this analysis, 2,428 (15.2%) did not have a declared major in their second semester. The percentage of students that were undeclared was significantly different between the population of LLP participants (14.0%) and students in traditional housing (15.6%), $\chi^2 (1, n=15933) = 5.19, p=.023$. This result was expected given the stated requirement of an academic major or minor for LLP participation held by all academic LLPs, which is the largest LLP type in this analysis. However, when examining participants by type of LLP, the proportion of undeclared students in each did not differ significantly, though academic LLP participants had the lowest proportion of students without a declared major (13.7%). Looking at choice of LLP participation, students who received their choice of LLP had a significantly smaller proportion of undeclared students (11.9%) than those who were placed in (16.8%), $\chi^2 (1, n=3638) = 18.10, p<.001$. A summary of the chi-square analyses is shown in Table 4.21.

Table 4.21

Chi-square Results for Undeclared Major in Second Semester Status by LLP

Status

LLP Status	Declared (0)		Undeclared (1)	
<i>LLP Participation</i>				
No (0)	84.4%	(10,378)	15.6%	(1,917)
Yes (1)	86.0%	(3,127)	14.0%	(511)
Chi-square	5.19	*		
<i>LLP Type</i>				
Honors (1)	85.7%	(294)	14.3%	(49)
Academic (2)	86.3%	(2,534)	13.7%	(402)
Special Interest (3)	83.3%	(299)	16.7%	(60)
Traditional (4)	84.4%	(10,378)	15.6%	(1,917)
Chi-square	7.47			
<i>LLP Choice</i>				
Assigned (0)	83.2%	(1,337)	16.8%	(270)
Opted In (1)	88.1%	(1,790)	11.9%	(241)
Chi-square	18.10	***		
*p<.05 **p<.01 ***p<.001				

Note: Number in parentheses indicates the total number of students in each category.

Credits Attempted vs. Credit Earned

For the entering students considered in this analysis, an average 32.56 credit hours were attempted in the first year of college, while an average of 31.59 credit hours were completed and earned. The difference between attempted and earned credits, which averages .97 credits for the students in this study, is used in this analysis as an indicator of academic commitment to the institution. There was a significant difference in the average difference between credits hours attempted versus earned between students who participated in LLPs (.82 hours) and those in traditional housing (1.01 hours), $t(6852.7) = 4.13$, $p < .001$.

Comparing the average difference between credits hours attempted and earned by type of housing, honors students participants had the lowest average difference (.53 hours) while students in traditional housing had the highest difference (1.01 hours). Again, there was a statistically significant difference between the groups, $F(3, 15929) = 6.28, p < .001$. As context, KHC participants are required to complete first year seminar and studio courses in addition to other freshman year requirements taken by all BU students (BU KHC, n.d.). The lower difference for honors LLP participants may be related to this more structured curriculum taken by KHC participants, along with the availability of onsite academic support staff to advise these students.

A Tukey post-hoc test revealed that the average difference between credit hours attempted versus earned by students in traditional housing was statistically significantly higher than difference in credits for students in honors LLPs ($p = .006$) and students in academic LLPs ($.84, p = .014$). There were no statistically significant difference in the average difference in credit hours attempted versus earned between students in special interest LLPs (.88 hours) and those in honors LLPs ($p = .30$), academic LLPs ($p = .99$) or students in traditional housing ($p = .81$). There was also no significant difference in the average difference in credit hours attempted and earned between students in honors LLPs and those in academic LLPs ($p = .17$). When considering student choice of participation, there was no significant difference in the average difference in credit hours attempted and earned between students who chose to participate in LLPs (.76)

and those who were placed into an LLP (.89), $t(3329.1) = 1.57$, $p = .116$. The results of the t-tests and one-way ANOVA analyses are available in Tables 4.22 and 4.23, respectively.

Table 4.22

T-test Results for the Average Difference Between Credit Hours Attempted and Earned by LLP Participation and Choice

Variable	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
<i>LLP Indicator</i>						
Traditional Housing (0)	12295	1.01	2.77	4.13	6852.7	.000
LLP Participants (1)	3638	0.82	2.37			
<i>Received Choice of LLP</i>						
No (0)	1607	0.89	2.46	1.57	3329.1	.116
Yes (1)	2031	0.76	2.29			

Table 4.23

One-way ANOVA Comparing Average Difference Credit Hours Attempted vs. Earned by Type of LLP

Variable	LLP Type	N	Mean	SD	F	Sig.
Unmet Need	Honors (1)	343	0.53	2.12	6.28	.000
	Academic (2)	2,936	0.84	2.35		
	Special Interest (3)	359	0.88	2.67		
	Traditional Housing (4)	12,295	1.01	2.77		

Uses Harmonic Mean Sample Size = 653.29 due to unequal sample sizes. Type I error levels are not guaranteed.

Regression Analysis – 1st Year Retention by Demographic, Pre-College Preparation Factors, and 1st Year Participation Variables

In addition to the variables previously analyzed, binary logistic regression was employed to understand how variables related to academic participation in the first year might affect retention after the first year.

Table 4.24 shows the results of the binary regression model, which was statistically significant, $\chi^2(21) = 460.65, p < .001$. Of the total 15,933 records, 15,844 (99.4%) were included in the analysis and 89 (0.6%) were missing cases. The explanatory value of the model was increased over the previous analysis though still remains weak (Nagelkerke $R^2 = .07$). With the inclusion of new variables into the analysis, gender becomes related to differences in the proportion of students retained when holding all other variables constant. Male students were, on average, 1.20 times, or 20% more likely to be retained as female students. Among the race and ethnic categories, two groups of students, those who identified as Asian or as Non-Resident Alien, had significant relationships with retention. Students who identified as Asian were 1.79 times, or 79% more likely than students who identified as White to be retained. Students who identified as Non-Resident Alien were 1.42 times, or 42% more likely to be retained than White students.

Table 4.24

Binary Logistic Regression Analysis of First Year Retention by Gender,
Race/Ethnicity, Academic and Financial Resources, LLP Participation and First
Year Commitment

	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	.18	.07	.006	1.20
Race/Ethnicity				
Non-Resident Alien	.35	.11	.001	1.42
Unknown/Missing	-.06	.11	.607	.94
Hispanic	.03	.12	.802	1.03
Asian	.58	.11	.000	1.79
Black	.34	.22	.120	1.40
Other Ethnicity	-.19	.14	.200	.83
Academic Preparation				
SAT - Combined (00s)	-.07	.02	.005	.94
High School GPA	-.11	.12	.346	.89
Financial Resources				
Unmet Need Indicator	.18	.09	.048	1.20
Pell Indicator	.13	.11	.247	1.14
Merit Indicator	.23	.09	.015	1.26
Need-Based Indicator	.35	.11	.002	1.42
Student Loan Indicator	-.11	.09	.197	.89
LLP Type				
Honors LLP	.32	.29	.257	1.38
Academic LLP	.37	.12	.003	1.45
Special Interest LLP	-.07	.22	.740	.93
LLC Choice Indicator	-.07	.15	.672	.94
First Year Performance				
Undeclared - Semester 2	.19	.09	.038	1.21
Credits Attempt Less	-.13	.01	.000	.88
Credits Earned				
First Year Cumulative GPA	.25	.07	.000	1.29
Constant	3.15	.54	.000	23.33

Note: Nagelkerke $R^2 = .07$, $\chi^2(21) = 460.65$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers
for LLP Participant Indicator)

SAT - Combined again shows a significant relationship with student retention with the addition of first year participation variables, when controlling for all other variables. For each 100-point increase in a student's SAT - Combined score, the odds of being retained were decreased by 6%. High school GPA, however, is no longer significantly related to retention.

Of the financial resource indicators included, indication of unmet need and receipt of need-based aid and of merit aid again had a significant relationship with retention. Specifically, students without unmet need were 1.20 times, or 20% more likely to be retained than students with unmet need. Merit aid recipients were 1.26 times, or 26% more likely to be retained than non-recipients, and need-based aid recipients were 1.42 times, or 42% more likely to be retained. Indicators of Pell receipt, and student loan aid did not have a significant relationship with retention.

Looking at LLP choice, participation in an LLP had a significant relationship with retention. Students who participated in an academic LLP were 1.45 times, or 45% more likely to be retained than those in traditional housing. Whether or not a student received his or her choice of LLP or was placed was not significantly related to retention.

All first year commitment and performance indicators showed a significant relationship with student retention to the second year. For students who were undeclared in the second semester, the likelihood of being retained was

increased by a factor of 1.21. Looking at the difference between credits attempted versus earned, students were 12% less likely to be retained for every one-credit increase in the difference between attempted and earned. First year GPA also had a positive relationship with retention. For every point change in GPA, the odds of being retained increased by 1.29, or 29%.

In summary, while the addition of variables representing a student's first year performance increased the Nagelkerke R^2 from 0.01 to .07, the explanatory power of the model still remains weak. Of the variables that were significant in the previous regression model, high school GPA was found to no longer have a significant relationship with retention with the addition of first year performance variables. Gender and non-resident alien status, however, became significant in relationship to retention.

Regression Analysis – 1st Year GPA by Demographic, Pre-College Preparation Factors, LLP Participation and 1st Year Participation

Linear regression was employed to understand how LLP participation, demographic variables, academic and financial resources at the time of entry to college, and variables associated with first year participation might be related to a student's cumulative first year GPA. Table 4.25 shows the results of the linear regression model, which was statistically significant, $R^2 = .45$, $F(20, 15823) = 656.52$, $p < .001$. Of the total 15,933 records, 15,843 (99.4%) were included in the analysis and 90 (0.6%) were missing cases. Entry of the first year

participation variables resulted in shifting of variables that were significant in the model. In addition, the model's predictive power increased, with a resulting R^2 of .45.

Among the race and ethnic categories, while Hispanic, Asian, Black and Other Race/Ethnicity status continue to show a significant relationship with first year GPA when controlling for all other variables. Non-resident Alien status, however, was no longer significantly related ($p = .641$). SAT-Combined and high school GPA also continued to be significantly related to first year GPA ($p < .001$ for both variables). Of the financial resources indicators included, while Pell receipt was no longer significantly related to first year GPA, receipt of non-private loans did show significance in the model when controlling for all other variables ($p = .026$), though the effect was negligible. Specifically, non-private loan recipients had first year GPAs that were, on average, .02 points lower than non-recipients. Involvement in honors and academic LLP programs and choice to participate in LLPs were again significantly associated with first year GPA.

Table 4.25

Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation, and First Year Commitment and LLP Participation

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	.22	.06		4.03	.000
Gender (1, Male)	-.05	.01	-.04	-6.66	.000
Race/Ethnicity					
Non-Resident Alien	.01	.01	.00	.47	.641
Unknown/Missing	-.01	.01	.00	-.51	.610
Hispanic	-.05	.01	-.03	-4.27	.000
Asian	-.12	.01	-.07	-11.05	.000
Black	-.10	.02	-.03	-4.62	.000
Other Ethnicity	-.07	.02	-.02	-4.04	.000
Academic Preparation					
SAT - Combined (00s)	.08	.00	.21	31.93	.000
High School GPA	.41	.01	.21	32.85	.000
Financial Resources					
Unmet Need Indicator	-.03	.01	-.02	-1.97	.049
Pell Indicator	-.02	.01	-.01	-1.83	.068
Merit Indicator	.11	.01	.07	11.52	.000
Need-Based Indicator	.05	.01	.04	3.24	.001
Student Loan Indicator	-.02	.01	-.02	-2.23	.026
LLP Type					
Honors LLP	.10	.03	.02	3.50	.000
Academic LLP	.02	.01	.02	2.12	.034
Special Interest LLP	.01	.02	.00	.30	.765
LLC Choice Indicator	.04	.01	.02	2.50	.012
First Year Performance					
Undeclared - Semester 2	-.01	.01	-.01	-1.58	.115
Credits Attempt Less Credits Earned	-.11	.00	-.51	-84.83	.000

Note: $R^2 = .45$, $F(20, 15823) = 656.52$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Unlike the model for retention, where all first year commitment and participation variables showed significance, only the difference between credits attempted versus earned in the first year had a significant relationship with first year GPA. For each one credit increase in the difference between attempted and earned credit hours, students scored, on average, .11 points lower in first year GPA.

In total, the addition of first year performance variables changed the overall composition of the regression equation predicting first year GPA by removing Non-Resident Alien status and receipt of Pell grants from significance, but adding the indicator of unmet need as a significant variable. Also notable is that the explanatory power of the equation doubled with the addition of first year variables, increasing the R^2 from .20 to .45.

In comparison to the model predicting retention, while both undeclared status and the difference between credits attempted versus earned had significant negative relationships with retention, only credits attempted versus earned had significance in predicting first year GPA, when holding all other variables constant. The models also shared as significant the demographic variables of gender and identification as Asian, the student's SAT - Combined score, the financial resource indicators of unmet need, merit aid, and need based aid, and participation in academic LLPs.

Academic and Social Experience

Students in the entering class of 2013 took part in the NSSE. Of the 3,758 students entering in fall of 2013 that were included in this analysis, 2,328 provided responses to the NSSE survey, resulting in a response rate of 61.9%. The entering class of fall 2013 was compared to the previous entering classes of falls of 2010 through 2012 to highlight any differences in this group that may affect the generalizability of results to the overall population. Similarly, the population of NSSE respondents was also compared to those fall 2013 entrants who did not participate in the survey to understand potential differences in these two groups.

Comparing Entering Classes of 2010-2012 versus 2013

The fall 2013 entering class differed from the previous classes in several significant ways. Chi-square and t-test results indicating differences between population proportions and result means of student characteristics are shown in Tables 4.26 and 4.27. Examining the demographic variables, the most notable difference was a larger proportion of international students represented in 2013 class (20.3%), compared to 14.2% of the previous classes. This difference was significant, $\chi^2(1, n=15933) = 79.88, p < .001$. Increased international enrollment was highlighted as a trend at the university, explaining the difference between classes (Barlow, 2013). Black, Hispanic and Other Race/Ethnicity students also represented a greater proportion of the fall 2013 class (4.1% versus 3.3%, 13.1%

versus 10.6%, and 5.8% versus 4.6%, respectively), providing another significant difference, $\chi^2 (5, n=13440) = 39.89, p < .001$. Difference in gender was not significant.

Both academic preparation variables differed significantly between the two groups of students, highlighting the university's trend in increasingly competitive and selective student enrollment (Barlow, 2013). Students in this analysis from the entering class of 2013 had both significantly higher SAT - Combined scores (1931.23) and high school GPA (3.59) than those of the previous classes (1917.06 and 3.54, respectively), $t (15912) = 4.84, p < .001$ and $t (6760.9) = 9.19, p < .001$, respectively.

The entering class of fall 2013 presented a stronger financial position than previous classes. The 2013 class had a significantly higher proportion of students without unmet need (76.5% vs. 71.2% of students in the classes of 2010 through 2012), $\chi^2 (1, n=15933) = 40.01, p < .001$. This finding can be related to the significantly higher proportion of international students in the class, who are not eligible for federal financial aid and must provide documentation of sufficient financial resources prior to enrollment. In addition, a significantly higher proportion of entering students in the fall of 2013 received merit aid, and higher proportions of those students who applied for aid received need-based and Pell grants. Of the 2013 entering class, 19.7% received merit aid, compared to 18.0% of the previous classes, $\chi^2 (1, n=15933) = 5.44, p = .20$. Of the entering

2013 class who applied for financial aid, 61.0% received need-based aid and 25.3% received Pell grants, compared to 58.5% and 22.7% of the previous classes' aid applicants, respectively, $\chi^2 (1, n=10244) = 4.52, p = .034$ and $\chi^2 (1, n=10244) = 7.02, p = .008$, respectively.

In regard to LLP participation, while a greater proportion of the entering 2013 class participated in LLPs (24.1% vs. 22.4% of the previous classes), the proportion of students who chose to participate decreased (50.9% vs. 57.5% of the previous classes). Both of these differences were significant, $\chi^2 (1, n=15933) = 4.73, p = .030$ and $\chi^2 (1, n=3638) = 11.72, p = .001$, respectively. As the KHC became more established, growth in enrollment in this program was reflected in the higher proportion of students participating in honors LLPs among the entering class of 2013 compared to the previous classes (14.2% vs. 7.8%, respectively), $\chi^2 (2, n=3638) = 34.84, p < .001$.

Table 4.26

Chi-square Results for Categorical Variables by Entering Cohort

Variable	2010-2012 (0)		2013 (1)	
<i>Gender</i>				
Female (0)	60.7%	(7,387)	62.3%	(2,341)
Male (1)	39.3%	(4,788)	37.7%	(1,417)
Chi-Square	3.17			
<i>Domestic Race/Ethnicity</i>				
Missing (2)	9.9%	(1,034)	7.5%	(226)
Hispanic/Latino (3)	10.6%	(1,105)	13.1%	(393)
Asian (5)	16.2%	(1,687)	15.3%	(458)
Black (6)	3.3%	(344)	4.1%	(123)
White (8)	55.4%	(5,789)	54.1%	(1,622)
Other (9)	4.6%	(485)	5.8%	(174)
Chi-Square	39.89	***		
<i>International/Domestic</i>				
Domestic (0)	85.8%	(10,444)	79.7%	(2,996)
International (1)	14.2%	(1,731)	20.3%	(762)
Chi-Square	79.88	***		
<i>Financial Indicators</i>				
Unmet Need (0)	28.8%	(3,506)	23.5%	(884)
No Unmet Need (1)	71.2%	(8,669)	76.5%	(2,874)
Chi-Square	40.01	***		
No Need-Based Aid (0)	41.5%	(3,313)	39.0%	(881)
Need-Based Aid (1)	58.5%	(4,672)	61.0%	(1,378)
Chi-Square	4.52	*		
No Pell Aid (0)	77.3%	(6,176)	74.7%	(1,687)
Pell Aid (1)	22.7%	(1,809)	25.3%	(572)
Chi-Square	7.02	**		
No Merit Aid (0)	82.0%	(9,983)	80.3%	(3,018)
Merit Aid (1)	18.0%	(2,192)	19.7%	(740)
Chi-Square	5.44	*		
No Loan Aid (0)	28.5%	(2,274)	29.5%	(666)
Loan Aid (1)	71.5%	(5,711)	70.5%	(1,593)
Chi-Square	.87			

Table 4.26 (cont.)

Chi-square Results for Categorical Variables by Entering Cohort

Variable	2010-2012 (0)		2013 (1)	
<i>LLP Participation</i>				
No (0)	77.6%	(9,444)	75.9%	(2,851)
Yes (1)	22.4%	(2,731)	24.1%	(907)
Chi-square	4.73	*		
<i>LLP Type</i>				
Honors (1)	7.8%	(214)	14.2%	(129)
Academic (2)	81.7%	(2,231)	77.7%	(705)
Special Interest (3)	10.5%	(286)	8.0%	(73)
Chi-square	34.84	***		
<i>LLP Choice</i>				
Assigned (0)	42.5%	(1,162)	49.1%	(445)
Opted In (1)	57.5%	(1,569)	50.9%	(462)
Chi-square	11.72	**		
<i>First Year Success</i>				
Declared Major (0)	84.3%	(10,260)	86.3%	(3,245)
Undeclared Major (1)	15.7%	(1,915)	13.7%	(513)
Chi-square	9.60	**		
Not Retained (0)	7.5%	(917)	6.1%	(229)
Retained (1)	92.5%	(11,258)	93.9%	(3,529)
Chi-square	8.90	**		

*p<.05 **p<.01 ***p<.001

Note: Number in parentheses indicates the total number of students in each category. Need-based aid, Pell aid, and loan aid analyses considered only those students who applied for aid.

Students entering in the fall of 2013 also differed from students in previous years' classes in regard to their performance in the first year. The entering class of 2013 had a significantly higher mean first year GPA and proportion of retained students, as well as a lower proportion of students who were undeclared in the second semester. The mean first year GPA of students entering in 2013 (3.09) was significantly higher than that of the classes of 2010 through 2012 (3.03), t

(6524.3) = 6.67, $p < .001$. In addition, the retention rate of the 2013 class (93.9%) also significantly exceeded that of its predecessor classes (92.5%), χ^2 (1, $n=15933$) = 8.90, $p = .003$. The class of 2013's proportion of students with an undeclared major in their second semester was 13.7%, significantly lower than that of the previous classes (15.7%), χ^2 (1, $n=15933$) = 9.60, $p = .002$. There was no significant difference in the mean difference between credits attempted versus earned between the two groups.

Table 4.27

T-test Results for the Average Difference Between Academic Preparation and First Year Performance Variables by Entering Cohort

Variable	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Academic Preparation						
<i>SAT - Combined</i>						
2010-2012 (0)	12,156	1917.06	157.13	4.84	15912	.000
2013 (1)	3,758	1931.23	156.09			
<i>High School GPA</i>						
2010-2012 (0)	12,104	3.54	0.30	9.19	6760.9	.000
2013 (1)	3,758	3.59	0.28			
First Year Performance						
<i>First Year Cumulative GPA</i>						
2010-2012 (0)	12,175	3.03	0.57	6.67	6524.3	.000
2013 (1)	3,758	3.09	0.54			
<i>Credits Attempted vs. Earned</i>						
2010-2012 (0)	12,175	0.95	2.66	0.91	15931	.360
2013 (1)	3,758	1.00	2.75			

Both previous regression analyses were replicated isolating the students from the entering class of 2013. These additional analyses allowed for identification of

any differences in predictor variables for this class compared to the entire pool of entering students used in this analysis. Table 4.28 shows the results of the binary regression model predicting retention in the entering class of 2013. This model was statistically significant, $\chi^2(21) = 106.65$, $p < .001$. The explanatory value of the model was slightly stronger than that containing all four entering cohorts (Nagelkerke $R^2 = .08$ vs. $.07$, respectively).

Comparing models with regard to student demographics, while gender was a significant predictor of retention in the model containing all students, it was no longer significant when looking at fall 2013 entering students only, when controlling for all other variables. While indication of Non-Resident Alien and Asian statuses showed significant positive relationships with retention in both models, indication of Other Race/Ethnicity was significantly related to retention when considering only students entering in the class of 2013. Students who identified Other Race/Ethnicity were 49% less likely to be retained than White students.

Table 4.28

Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, and LLP Participation for the Entering Class of 2013

	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	.01	.15	.969	1.01
Race/Ethnicity				
Non-Resident Alien	.54	.22	.015	1.72
Unknown/Missing	.03	.30	.916	1.03
Hispanic	-.01	.26	.980	.99
Asian	.63	.28	.025	1.88
Black	-.12	.42	.777	.89
Other Ethnicity	-.72	.26	.007	.49
Academic Preparation				
SAT - Combined (00s)	-.05	.05	.307	.95
High School GPA	.21	.28	.464	1.23
Financial Resources				
Unmet Need Indicator	-.28	.22	.207	.75
Pell Indicator	.78	.28	.006	2.18
Merit Indicator	.05	.19	.803	1.05
Need-Based Indicator	-.13	.25	.602	.88
Student Loan Indicator	.09	.20	.643	1.10
LLP Type				
Honors LLP	.38	.55	.487	1.47
Academic LLP	.25	.26	.328	1.29
Special Interest LLP	.25	.61	.685	1.28
LLC Choice Indicator	.04	.35	.899	1.05
First Year Performance				
Undeclared - Semester 2	.28	.21	.194	1.32
Credits Attempt Less Credits Earned	-.16	.02	.000	.85
First Year Cumulative GPA	-.21	.15	.174	.81
Constant	3.85	1.24	.002	47.01

Note: Nagelkerke $R^2 = .08$; $\chi^2 (21) = 106.65$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Although SAT - Combined was a significant predictor of retention among all entering students in this analysis, neither SAT nor high school GPA had a significant relationship with retention when only the entering class of 2013 was considered. Financial resource variables also contributed differently to each regression equation. While receipt of merit or need-based aid were positively related to retention when considering all students, only receipt of Pell grants was significantly related to retention among the students entering in fall 2013. Pell recipients were 2.18 times, or over twice as likely to be retained as non-Pell recipients, when controlling for all other variables.

Though participation in academic LLPs was significantly related to retention for all students in this analysis, none of the LLP indicators proved to be significant predictors of retention for the entering class of 2013. In addition, undeclared status in the second semester and first year GPA were not significantly related to retention when considering only students entering in fall of 2013. Of the first year performance variables, the difference between credits attempted versus earned had a significant negative relationship to retention in both models. Among students of the entering class of 2013, students were 15% less likely to be retained for every one credit increase in the difference between attempted and earned.

To compare variables that were significantly associated with first year GPA between the cohorts, a linear regression model was produced, with results

shown in Table 4.29. This model was statistically significant, $R^2 = .42$, $F(20, 3737) = 135.67$, $p < .001$. In comparing the two models, there is good deal of overlap in the variables that were significantly related to first year GPA when holding all other variables constant. In addition, the models have comparable explanatory power, with an R^2 of .45 for all students in this analysis compared to .42 for the model considering only the entering class of 2013.

Of the variables that were significantly related to first year GPA among all entering students considered in this analysis, several were found to be not significant when the regression was replicated for the entering class of 2013. In particular, identification as Hispanic was not significantly related to retention in the revised model, when holding all other variables constant. Though all financial resource variables except Pell receipt showed a significant relationship with first year GPA in the analysis of all entering students in this study, only receipt of merit aid showed a positive relationship to first year GPA in both models. In addition, only indication of opting in to an LLP showed a significant positive relationship with first year GPA in both models, when holding all other variables constant. While participation in honors and academic LLPs showed significant positive relationships in the full model, these variables were not significant in considering only the entering class of 2013.

Table 4.29

Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation, and First Year Commitment and Participation Variables for the Entering Class of 2013

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	.19	.12		1.62	.106
Gender (1, Male)	-.05	.01	-.05	-3.85	.000
Race/Ethnicity					
Non-Resident Alien	.03	.02	.02	1.47	.142
Unknown/Missing	-.01	.03	.00	-.20	.839
Hispanic	-.04	.02	-.02	-1.63	.102
Asian	-.05	.02	-.03	-2.33	.020
Black	-.14	.04	-.05	-3.46	.001
Other Ethnicity	-.08	.03	-.03	-2.29	.022
Academic Preparation					
SAT - Combined (240)	.08	.01	.22	15.18	.000
High School GPA	.42	.03	.21	15.53	.000
Financial Resources					
Unmet Need Indicator	-.02	.03	-.02	-.61	.543
Pell Indicator	-.03	.02	-.02	-1.44	.151
Merit Indicator	.11	.02	.08	5.86	.000
Need-Based Indicator	.03	.03	.02	.86	.391
Student Loan Indicator	.00	.02	.00	.16	.870
LLP Type					
Honors LLP	.04	.05	.01	.77	.441
Academic LLP	.00	.02	.00	-.07	.944
Special Interest LLP	.00	.05	.00	.07	.941
LLC Choice Indicator	.08	.03	.05	2.61	.009
First Year Performance					
Undeclared - Semester 2	.01	.02	.01	.50	.619
Credits Attempt less	-.09	.00	-.46	-36.36	.000
Credits Earned					

Note: $R^2 = .42$, $F(20, 3737) = 135.67$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

While similarities exist between the full cohort of entering students and the entering class of 2013 in the regression models to predict first year GPA, the retention models for these cohorts include each include different significant predictors. Because of these differences, caution should be applied in generalizing any subsequent analyses that isolate the entering class of 2013 to the entire research population.

In summary, the entering class of 2013 had significant differences from the prior entering classes. As a whole, this population was more diverse and international than the previous cohorts, it's students were academically stronger, with better academic preparation, a higher mean first year GPA, and were more likely to be retained. Though there was a significantly greater proportion of Pell recipients among the group, they also had stronger financial resources, with less unmet need and more merit and need-based aid. Pell receipt proved to be a significantly related to retention, while receipt of merit aid was significantly related to first year GPA, when holding all other variables constant. A larger proportion of this class participated in LLPs, but more of these students were either honors LLP participants, or placed into the LLP without choosing. When controlling for all other variables, students who chose LLPs outperformed students who did not and those in traditional housing by .08 points in first year GPA, on average. LLP participation variables were otherwise not significant in predicting retention or first year GPA among the entering cohort of 2013.

Comparing NSSE Participants and Non-Respondents

In addition to understanding how the entering class of 2013 differed from the entering classes of 2010 through 2012, it is also important to understand any distinctions between NSSE respondents and non-respondents within the 2013 entering cohort. Chi-square and t-test results indicating differences between population proportions and result means for these two groups are shown in Tables 4.30 and 4.31.

Examining demographic variables, females represented a significantly larger proportion of NSSE participants (66.9% vs. 54.8% of non-participants), $\chi^2 (1, n=3758) = 54.82, p < .001$. While international students comprised a larger percentage of the entering 2013 class, domestic students represented a significantly larger proportion of survey respondents, with 83.0% compared to 73.3% of non-respondents, $\chi^2 (1, n=3758) = 40.38, p < .001$. In addition, while domestic students who identified as Asian had a higher proportion of students among the survey respondents (17.5% vs. 11.3%), students who identified as White represented a smaller proportion of survey respondents (50.7% vs. 60.3%). Differences in the proportion of domestic NSSE participants by race/ethnicity were significant, $\chi^2 (5, n=2996) = 37.60, p < .001$.

Participants and non-participants showed a significant difference in academic preparation. NSSE participants had both significantly higher average SAT - Combined scores (1949.53) and high school GPA (3.63) than those of non-

participants (1901.44 and 3.53, respectively), $t(3756) = 9.27, p < .001$ and $t(2835.7) = 10.09, p < .001$, respectively. In addition, participants had both a larger proportion with unmet need (41.6% vs. 29.0% of non-participants) as well as a greater proportion of students with merit aid (21.8% vs. 16.3% of non-participants), $\chi^2(1, n=3758) = 60.48, p < .001$ and $\chi^2(1, n=3758) = 16.85, p < .001$, respectively. Given that NSSE provides students with an opportunity to express their perceptions to their institution, it is plausible that students who are on both ends of the spectrum of perceived value of their education (receiving more or less aid than average) would be more likely to respond. In addition, the incentive given for participation may have been of greater influence on students with perceive financial need.

NSSE respondents had a greater proportion of LLP participants (25.9%) than non-respondents (21.3%), a significant difference, $\chi^2(1, n=3758) = 10.43, p = .001$. In addition, there was a significant difference between NSSE participants and non-participants in considering type of LLP, with participants have a higher proportion of honors LLP students (16.6% vs. 9.5% of non-respondents), $\chi^2(2, n=907) = 10.83, p = .004$. In addition, students who chose to participate in LLPs accounted for a greater proportion of NSSE participants, corresponding with the lower proportion of international students. LLP choosers accounted for 54.1% of NSSE participants, compared to 44.7% of non-participants, $\chi^2(1, n=907) = 7.03, p = .008$.

Table 4.30

Chi-square Results for Categorical Variables by NSSE Participation

LLP Status	Non-Participants (0)		NSSE Participants (1)	
<i>Gender</i>				
Female (0)	54.8%	(784)	66.9%	(1,557)
Male (1)	45.2%	(646)	33.1%	(771)
Chi-Square	54.82	***		
<i>Domestic Race/Ethnicity</i>				
Missing (2)	6.4%	(68)	8.2%	(158)
Hispanic/Latino (3)	13.8%	(147)	12.7%	(246)
Asian (5)	11.3%	(120)	17.5%	(338)
Black (6)	3.4%	(36)	4.5%	(87)
White (8)	60.3%	(642)	50.7%	(980)
Other (9)	4.8%	(51)	6.4%	(123)
Chi-Square	37.60	***		
<i>International/Domestic</i>				
Domestic (0)	74.4%	(1,064)	83.0%	(1,932)
International (1)	25.6%	(366)	17.0%	(396)
Chi-Square	40.38	***		
<i>Financial Indicators</i>				
No Unmet Need (0)	71.0%	(1,015)	58.4%	(1,359)
Unmet Need (1)	29.0%	(415)	41.6%	(969)
Chi-Square	60.48	***		
No Need-Based Aid (0)	41.5%	(289)	37.9%	(592)
Need-Based Aid (1)	58.5%	(407)	62.1%	(971)
Chi-Square	2.69			
No Pell Aid (0)	76.4%	(532)	73.9%	(1,155)
Pell Aid (1)	23.6%	(164)	26.1%	(408)
Chi-Square	1.64			
No Merit Aid (0)	83.7%	(1,197)	78.2%	(1,821)
Merit Aid (1)	16.3%	(233)	21.8%	(507)
Chi-Square	16.85	***		
No Loan Aid (0)	30.9%	(215)	28.9%	(451)
Loan Aid (1)	69.1%	(481)	71.1%	(1,112)
Chi-Square	.96			

Note: Number in parentheses indicates the total number of students in each category. Need-based aid, Pell aid, and loan aid analyses considered only those students who applied for aid.

Table 4.30, cont.

Chi-square Results for Categorical Variables by NSSE Participation

LLP Status	Non-Participants (0)		NSSE Participants (1)	
<i>LLP Participation</i>				
No (0)	78.7%	(1,126)	74.1%	(1,725)
Yes (1)	21.3%	(304)	25.9%	(603)
Chi-square	10.43	**		
<i>LLP Type</i>				
Honors (1)	9.5%	(29)	16.6%	(100)
Academic (2)	79.9%	(243)	76.6%	(462)
Special Interest (3)	10.5%	(32)	6.8%	(41)
Chi-square	10.83	**		
<i>LLP Choice</i>				
Assigned (0)	55.3%	(168)	45.9%	(277)
Opted In (1)	44.7%	(136)	54.1%	(326)
Chi-square	7.03	**		
<i>First Year Success</i>				
Declared Major (0)	86.4%	(1,236)	86.3%	(2,009)
Undeclared Major (1)	13.6%	(194)	13.7%	(319)
Chi-square	0.01			
Not Retained (0)	8.9%	(127)	4.4%	(102)
Retained (1)	91.1%	(1,303)	95.6%	(2,226)
Chi-square	31.34	***		

*p<.05 **p<.01 ***p<.001

Note: Number in parentheses indicates the total number of students in each category.
Need-based aid, Pell aid, and loan aid analyses considered only those students who applied for aid.

NSSE participants also differed significantly from non-participants in first year academic performance. Due to the timing of the survey, which was conducted in the spring semester of 2014, any students who left the university during the fall semester would not have had an opportunity to respond. This is in line with the finding that participants in NSSE had a significantly higher retention rate than non-participants (95.6% vs. 91.1%), $\chi^2(1, n=3758) = 31.34, p < .001$. NSSE

participants also had a lower average of credit hours attempted versus earned (0.76 vs. 1.39 for non-participants) and a higher first year cumulative GPA (3.18 vs. 2.96 for non-participants). These differences were significant, $t(2576.8) = 11.56, p < .001$ and $t(2119.0) = 6.25, p < .001$, respectively. There was no significant difference in the proportion of undeclared majors among the two populations.

Table 4.31

T-test Results for the Average Difference Between Academic Preparation and First Year Performance Variables by NSSE Participation

Variable	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Academic Preparation						
<i>SAT - Combined</i>						
Non-Participants (0)	1,430	1901.44	155.78	9.27	3756	.000
Participants (1)	2,328	1949.53	153.48			
<i>High School GPA</i>						
Non-Participants (0)	1,430	3.53	0.29	10.09	2835.7	.000
Participants (1)	2,328	3.63	0.26			
First Year Performance						
<i>First Year Cumulative GPA</i>						
Non-Participants (0)	1,430	2.96	0.60	11.56	2576.8	.000
Participants (1)	2,328	3.18	0.49			
<i>Credits Attempted vs. Earned</i>						
Non-Participants (0)	1,430	1.39	3.47	6.25	2119.0	.000
Participants (1)	2,328	0.76	2.16			

The binary logistic regression of first year retention was replicated using the population of NSSE participants. The results of this analysis are shown in Table 4.32. This model was statistically significant, $\chi^2(21) = 61.60, p < .001$.

Compared to the regression model for the entire class of 2013, only two variables were significant in both: indication of Pell status, and the difference between credits attempted versus earned. In addition, first year GPA was significant for NSSE participants, with each one-point increase in GPA associated with a 76% decrease in retention. Subsequent analysis showed that NSSE respondents who were retained to the second year had a mean first year GPA of 3.17 while those respondents who were not retained had a mean GPA of 3.32. This difference was significant, $t(115.96) = 3.73, p < .001$. While first year GPA had a positive association with retention for all entering students, and was not a significant factor specifically for the class of 2013, this negative association indicates that higher achieving students who were likely to leave the institution were also more inclined to respond to the survey than those who did not leave.

The linear regression of cumulative first year GPA was replicated using the population of NSSE participants. These results are shown in Table 4.33. This model was statistically significant $R^2 = .38, F(20, 2307) = 70.75, p < .001$. Compared to the model for the class of 2013, several variables were significant in both. Of the demographic indicators, self-identification as Asian, Black, or Other Race/Ethnicity were significantly related to first year GPA in both models, controlling for all other variables. In addition, indication of Non-Resident Alien status was significant for NSSE respondents. Specifically, international students had first year GPAs that were, on average, .05 points higher than students who identified as White, holding all other variables constant.

Table 4.32

Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, and LLP Participation for NSSE Participants

	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	-.29	.22	.187	.75
Race/Ethnicity				
Non-Resident Alien	.22	.34	.518	1.25
Unknown/Missing	.20	.46	.672	1.22
Hispanic	-.26	.37	.490	.77
Asian	.08	.35	.816	1.09
Black	.30	.76	.696	1.34
Other Ethnicity	-.65	.39	.096	.52
Academic Preparation				
SAT - Combined (00s)	.09	.08	.279	1.09
High School GPA	.72	.44	.101	2.06
Financial Preparation				
Unmet Need Indicator	-.58	.32	.072	.56
Pell Indicator	.98	.41	.016	2.66
Merit Indicator	.06	.28	.822	1.06
Need-Based Indicator	-.12	.34	.736	.89
Student Loan Indicator	-.37	.29	.203	.69
LLP Type/Choice				
Honors LLP	.18	.68	.798	1.19
Academic LLP	-.21	.33	.528	.81
Special Interest LLP	-.41	.76	.591	.67
LLC Choice Indicator	.00	.42	.999	1.00
First Year Performance				
Undeclared - Semester 2	.23	.33	.491	1.25
Credits Attempt Less Credits Earned	-.22	.04	.000	.80
First Year Cumulative GPA	-1.44	.28	.000	.24
Constant	4.33	1.97	.028	75.91

Note: Nagelkerke $R^2 = .086$, $\chi^2(21) = 61.60$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

The NSSE participant profile derived from these findings is one of a student who is more likely female and domestic than non-participants. The participant has a higher likelihood of being an underrepresented minority or Asian. Though there is a greater probability that the student will have unmet need, the participant is also more likely to have merit aid than non-participants. This student is more likely to be an honors LLP participant or one who opted into LLP participation than those who did not participate in the NSSE survey.

Overall, there was overlap in the variables that were significant in predicting retention and first year GPA for the four cohort population and that of the NSSE participants. Though there were fewer significant variables in the models for the NSSE population, these predicted similar amounts of variation as the full model.

Perception Variables

As part of the survey, several questions were asked pertaining to the students' perception of their level of academic, social, and overall experience. T-test, ANOVA, and chi-square analyses were used to analyze differences in responses to these questions for students participating in LLPs compared to those in traditional housing, as well as between the students in the four different types of housing, and between students who chose an LLP and those who did not.

Table 4.33

Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation, and First Year Commitment and Participation Variables for NSSE Participants

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	.25	.15		1.64	.102
Gender (1, Male)	-.03	.02	-.03	-1.50	.133
Race/Ethnicity					
Non-Resident Alien	.05	.03	.04	2.08	.038
Unknown/Missing	-.03	.03	-.01	-.77	.443
Hispanic	-.03	.03	-.02	-1.04	.301
Asian	-.08	.03	-.06	-3.21	.001
Black	-.15	.05	-.06	-3.37	.001
Other Ethnicity	-.09	.04	-.04	-2.34	.020
Academic Preparation					
SAT - Combined (240)	.08	.01	.24	12.57	.000
High School GPA	.41	.03	.22	12.15	.000
Financial Preparation					
Unmet Need Indicator	-.01	.03	-.01	-.31	.756
Pell Indicator	-.04	.03	-.03	-1.71	.088
Merit Indicator	.10	.02	.08	4.43	.000
Need-Based Indicator	.02	.04	.02	.55	.579
Student Loan Indicator	.00	.02	.00	.08	.933
LLP Type					
Honors LLP	.09	.05	.04	1.63	.102
Academic LLP	.02	.03	.01	.64	.520
Special Interest LLP	-.01	.06	.00	-.23	.817
LLC Choice Indicator	.04	.03	.03	1.27	.205
First Year Performance					
Undeclared - Semester 2	.01	.02	.01	.38	.703
Credits Attempt less	-.09	.00	-.38	-23.05	.000
Credits Earned					

Note: $R^2 = .38$, $F(20, 2307) = 70.75$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Three questions were selected to highlight potential differences in academic integration, social integration, and overall experience. The first asks about the student's perception of their quality of interaction with faculty. There was no significant difference in the mean responses to this questions between students in LLPs and those in traditional housing, $t(2121) = 1.81, p = .070$. Looking at differences between housing types, however, provides significant comparisons. Comparing the average difference in response by type of housing, honors students participants had the highest mean response (5.56) while students in traditional housing had the lowest different (5.11). There was a statistically significant difference between the groups, $F(3, 2119) = 3.58, p = .013$.

A Tukey post-hoc test revealed that the average difference in response concerning the quality of interaction with faculty by students in honors LLPs was statistically significantly higher than difference the responses of students in academic LLPs (5.15, $p = .038$) and students in traditional housing ($p = .009$). There was no statistically significant difference in the average response between students in honors LLPs and those in special interest LLPs (5.36, $p = .877$). There were also no significant differences in the average responses between students in academic LLPs and those in special interest LLPs or traditional housing, or between the responses of special interest LLP participants and students in traditional housing. When considering student choice of participation, there was no significant difference in the average response concerning the quality of interaction with faculty between students who chose to participate in

LLPs and those who were placed into an LLP, $t(555) = 1.41, p = .159$.

Students were also asked for their perception of the quality of interaction with other students. There was no significant difference in the mean responses to this question between students in LLPs and those in traditional housing, $t(1070.5) = .53, p = .600$. Significant differences exist when comparing average responses by housing types. Comparing the average difference in response by type of housing, honors LLP participants again had the highest mean response (5.95) while students in special interest LLPs had the lowest mean responses (5.49). There was a statistically significant difference between the groups, $F(3, 2149) = 2.77, p = .040$.

A Tukey post-hoc test revealed that the average response concerning the quality of interaction with students by honors LLP participants was statistically significantly higher than the average responses of students in academic LLPs (5.55, $p = .028$) and students in traditional housing (5.58, $p = .032$). There were no statistically significant differences in average responses between students in honors LLPs and those in special interest LLPs. There were also no significant differences in the average responses between students in academic LLPs and those in special interest LLPs or traditional housing, or between the responses of special interest LLP participants and students in traditional housing.

When considering student choice of participation, there was a significant difference in the average response concerning the quality of interaction with

students between students who chose to participate in LLPs (5.72) and those who were placed into an LLP (5.48), $t(564) = 2.32, p = .021$. When honor LLP participants are removed, however, the difference is no longer significant, $t(466) = 1.55, p = .122$. Results of t-test and ANOVA analyses are shown in Tables 4.34 and 4.35.

The students' overall experience was assessed in the final question, which provided a four-category scale on which students could provide their perception of their entire educational experience. Of the 2,077 responses received, 36.7% of students provided a rating of "excellent", 50.3% provided a rating of "good", 11.6% provided a rating of "fair", and 1.4% provided a rating of "poor". Because of the low number of "poor" ratings, the categories of "poor" and "fair" were consolidated to into a single variable for analysis.

Table 4.34

T-test Results for Quality of Interaction Indicators by LLP Participation

Variable	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
LLC Indicator						
<i>Quality of Interaction with Faculty</i>						
Did not participate (0)	1,566	5.11	1.39	1.81	2121	.070
Participated (1)	557	5.24	1.32			
<i>Quality of Interaction with Students</i>						
Did not participate (0)	1,587	5.58	1.33	0.53	1070.5	.600
Participated (1)	566	5.61	1.23			
LLC Choice						
<i>Quality of Interaction with Faculty</i>						
Did not participate (0)	257	5.15	1.34	1.41	555	.159
Participated (1)	300	5.31	1.31			
<i>Quality of Interaction with Students - Including Honors LLP</i>						
Did not participate (0)	261	5.48	1.20	2.32	564	.021
Participated (1)	305	5.72	1.24			
<i>Quality of Interaction with Students - Excluding Honors LLP</i>						
Did not participate (0)	255	5.46	1.20	1.55	466	.122
Participated (1)	213	5.64	1.30			

Table 4.35

ANOVA Results for Quality of Interaction Indicators by LLP Type

Variable	LLP Type	N	Mean	SD	F	Sig.
Quality of interaction with faculty						
	Honors (1)	98	5.56	1.24	3.58	.013
	Academic (2)	423	5.15	1.33		
	Themed Interest (3)	36	5.36	1.36		
	Traditional Housing (4)	1566	5.11	1.39		
Quality of interaction with students						
	Honors (1)	98	5.95	1.04	2.77	.040
	Academic (2)	431	5.55	1.25		
	Themed Interest (3)	37	5.49	1.33		
	Traditional Housing (4)	1587	5.58	1.33		

There was no significant difference between the distribution of responses when comparing the responses of students in LLPs to those in traditional housing, χ^2 (2, n=2077) = 2.96, $p=.228$. In comparing difference by type of housing, honors LLP participants had the highest proportion of students who rated their experience as excellent (55.1%) while academic LLPs had the highest proportion of students who rated their experience as good (53.6%). Differences in the proportion of student ratings were statistically significant, χ^2 (6, n=2077) = 17.54, $p=.007$. There was also no significant difference between the distribution of responses when comparing the responses of students who opted in to an LLP and those who were placed into one, χ^2 (2, n=547) = 2.68, $p=.261$. Chi-square analyses are shown in Table 4.36.

Regression Analysis – 1st Year Retention by Demographic, Pre-College Preparation Factors, 1st Year Participation Variables, and Student Perception

For the entering class of 2013, variables previously analyzed were combined with engagement indicators from the NSSE. A binary logistic regression was employed to understand how these variables might be related to retention after the first year. A correlation matrix of all variables in these analyses is available in Appendix 5.

Table 4.36

Chi-square Results for Evaluation of Overall Educational Experience by LLP

Participation

LLP Status	Poor & Fair (2)	Good (3)	Excellent (4)
<i>LLP Participation</i>			
No (0)	13.7% (210)	50.2% (768)	36.1% (552)
Yes (1)	11.0% (60)	50.6% (277)	38.4% (210)
Chi-square	2.96		
<i>LLP Type</i>			
Honors (1)	7.1% (7)	37.8% (37)	55.1% (54)
Academic (2)	11.6% (48)	53.6% (222)	34.8% (144)
Special Interest (3)	14.3% (5)	51.4% (18)	34.3% (12)
Traditional (4)	13.7% (210)	50.2% (768)	36.1% (552)
Chi-square	17.54 **		
<i>LLP Choice</i>			
Assigned (0)	10.5% (26)	54.4% (135)	35.1% (87)
Opted In (1)	11.4% (34)	47.5% (142)	41.1% (123)
Chi-square	2.68		
*p<.05 **p<.01 ***p<.001			

Note: Number in parentheses indicates the total number of students in each category

Table 4.37 shows the results of the binary regression model, which was statistically significant, $\chi^2(26) = 98.12, p < .001$. Of the total 2,328 records of NSSE participants, 2,039 (87.5%) were included in the analysis and 289 (12.4%) were missing cases. The explanatory value of the model nearly doubled in comparison to the previous analysis of NSSE participants (Nagelkerke $R^2 = .16$). All variables that were previously significant in the analysis of NSSE participants, including indicator of Pell receipt, the difference between credits attempted versus earned, and first year cumulative GPA, remained significant with added variables. While there was little change in the first year performance variables,

the indicator of Pell receipt strengthened. Pell recipients were 3.85 times as likely to be retained as non-Pell recipients, when controlling for all other variables.

Of the first year perception indicators added to the model, only a student's evaluation of his or her overall experience was significantly related to retention. Students who rated their overall experience as poor were .07 times, or 93.0% less likely to be retained than students who rated their experience as excellent. Students who rated their experience as fair were .20 times, or 80.0% less likely to be retained than students who rated their experience as excellent. Quality of interaction with faculty or other students were not significantly related to retention.

Regression Analysis – 1st Year GPA by Demographic, Pre-College Preparation Factors, LLP Participation, 1st Year Participation and Engagement

Linear regression was employed to understand how LLP participation, demographic variables, academic and financial resources at the time of entry to college, and variables associated with first year participation and engagement might affect a student's cumulative first year GPA. Table 4.38 shows the results of the linear regression model, which was statistically significant, $R^2 = .42$, $F(25, 2013) = 58.87$, $p < .001$. Of the total 2,328 records, 2,038 (87.5%) were included in the analysis and 290 (12.5%) were missing cases. With the addition of perception indicators, all variables that were previously significant in the analysis

of NSSE participants continued to be so, with the model's predictive power increasing from .38 to .42.

All three engagement indicators had a significant relationship with first year GPA. Looking at a student's perception of their quality of interaction with other students, for each one point increase on the perception scale, there was a decrease of .05 points in first year GPA, on average, holding all other variables in the equation constant. Students' perception of their quality of interaction with faculty showed a significant relationship with first year GPA, with each one point increase on the perception scale, there was an increase of .04 points in first year GPA, on average. A student's evaluation of their overall experience was also significantly related to first year GPA. Students who rated their overall experience as poor, fair, or good had first year GPAs that were, on average, .16, .17, and .05 points lower than that students who rated their experience as excellent, respectively.

Table 4.37

Binary Logistic Regression Analysis of First Year Retention by Gender, Race/Ethnicity, Academic and Financial Resources, and LLP Participation, and Perception Indicators

	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	-.36	.24	.138	.70
Race/Ethnicity				
Non-Resident Alien	.14	.38	.706	1.16
Unknown/Missing	.61	.56	.279	1.83
Hispanic	-.34	.42	.418	.71
Asian	.25	.41	.537	1.29
Black	.81	1.05	.440	2.25
Other Ethnicity	-.66	.46	.151	.52
Academic Preparation				
SAT - Combined (00s)	.06	.09	.510	1.06
High School GPA	.74	.50	.136	2.10
Financial Preparation				
Unmet Need Indicator	-1.02	.38	.007	.36
Pell Indicator	1.35	.49	.006	3.85
Merit Indicator	-.19	.30	.532	.83
Need-Based Indicator	-.57	.39	.141	.57
Student Loan Indicator	-.28	.34	.420	.76
LLP Type/Choice				
Honors LLP	.32	.78	.677	1.38
Academic LLP	-.43	.36	.226	.65
Special Interest LLP	-.94	.78	.232	.39
LLC Choice Indicator	-.10	.44	.821	.90
First Year Performance				
Undeclared - Semester 2	.39	.37	.288	1.48
Credits Attempt Less Credits Earned	-.21	.04	.000	.81
First Year Cumulative GPA	-1.42	.33	.000	.24
Engagement Indicators				
Quality of Interaction - Students	.13	.09	.141	1.14
Quality of Interaction - Faculty	-.07	.09	.454	.93
Evaluation of Experience - Poor	-2.68	.61	.000	.07
Evaluation of Experience - Fair	-1.61	.39	.000	.20
Evaluation of Experience - Good	-.54	.31	.078	.58
Constant	5.66	2.36	.017	286.04

Note: Nagelkerke $R^2 = .16$, $\chi^2(26) = 98.12$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Reference Group for Evaluation of Experience = Excellent

Table 4.38

Linear Regression Analysis of First Year GPA by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	.35	.17		2.06	.040
Gender (1, Male)	-.02	.02	-.02	-1.22	.223
Race/Ethnicity					
Non-Resident Alien	.10	.03	.07	3.45	.001
Unknown/Missing	.03	.03	.02	.93	.351
Hispanic	-.02	.03	-.01	-.55	.583
Asian	-.04	.03	-.03	-1.62	.104
Black	-.15	.05	-.06	-3.24	.001
Other Ethnicity	-.08	.04	-.04	-2.02	.044
Academic Preparation					
SAT - Combined (240)	.08	.01	.25	12.31	.000
High School GPA	.40	.04	.22	11.41	.000
Financial Preparation					
Unmet Need Indicator	-.02	.04	-.02	-.45	.655
Pell Indicator	-.04	.03	-.03	-1.67	.096
Merit Indicator	.09	.02	.08	4.20	.000
Need-Based Indicator	.02	.04	.02	.64	.520
Student Loan Indicator	-.01	.02	-.01	-.30	.764
LLP Type/Choice					
Honors LLP	.06	.05	.03	1.19	.235
Academic LLP	-.01	.03	-.01	-.23	.817
Special Interest LLP	-.02	.07	-.01	-.34	.731
LLC Choice Indicator	.05	.04	.04	1.43	.152
First Year Performance					
Undeclared - Semester 2	.03	.02	.02	1.19	.233
Credits Attempt Less Credits Earned	-.09	.00	-.39	-22.31	.000
Engagement Indicators					
Quality of Interaction - Students	-.05	.01	-.12	-6.32	.000
Quality of Interaction - Faculty	.04	.01	.11	5.56	.000
Evaluation of Experience - Poor	-.16	.08	-.04	-2.12	.034
Evaluation of Experience - Fair	-.17	.03	-.11	-5.30	.000
Evaluation of Experience - Good	-.05	.02	-.05	-2.58	.010

Note: $R^2 = .42$, $F(25, 2013) = 58.87$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Reference Group for Evaluation of Experience = Excellent

In summary, honors LLP participants were more likely to report strongly positive perceptions of their quality of interaction with students and faculty, as well as their overall experience. However, none of the LLP variables showed a significant relationship with retention for the 2013 cohort when controlling for all other variables. This was also true for the NSSE respondents, regardless of inclusion of student perception variables. With the removal of honors LLPs from the analysis, students who chose to participate in LLPs were not significantly different from those who did not choose to participate in their responses to the student perception variables. These results suggest that placement into an LLP without choosing did not significantly enhance or detract from a NSSE respondent's perception of his or her interactions with peers, faculty or overall experience in comparison to the perceptions of students in traditional housing.

A student's evaluation of their overall academic experience was significantly related, with the addition of perception indicators adding 7% to the explanation of overall variability in the student retention decision, nearly doubling the Nagelkerke R^2 . None of the LLP variables were significantly related to first year GPA in the models based on NSSE respondents when controlling for all other variables. However, students' quality of interaction with other students and faculty, as well as their evaluation of overall experience were significantly related to first year GPA. These perception variables added 4% to the explanation of variability in first year GPA, bring the total R^2 to .42.

Research Question 3

The following section contains analyses pertaining to the third research question explored in this study. The question is as follows:

When controlling for demographic and academic preparation indicators, is LLP participation a significant predictor of satisfaction with faculty interactions? Satisfaction with peer interactions? Evaluation of their overall experience?

Regression Analysis - Quality of Interaction with Students.

To examine how demographic indicators, academic and financial resources, LLP participation, and first year interaction indicators might be related to a student's perception of his or her quality of interaction with other students, linear regression was employed. Results of the regression analysis were significant ($R^2 = .03$, $F(21, 2131) = 2.90$, $p < .001$) and are detailed in Table 4.39. Of the total 2,328 records of the entering class of 2013 NSSE participants, 2,153 (92.5%) were included in the analysis and 175 (7.5%) were missing cases.

Several variables showed a significant relationship with the quality of interaction with students rating. Among the demographic variables, students who reported themselves as Non-Resident Alien showed a significant difference from those students who reported themselves to be White in terms of how they perceived the quality interaction with other students. Specifically, Non-Resident Aliens

reported .22 points lower on the perception scale, on average, than students who indicated that they were White, holding all other variable constant.

Among the financial preparation variables, only Pell status showed a significant relationship with the quality of interaction with other students. Specifically, students who received Pell aid reported a satisfaction rating that was .31 points lower, on average, than students who did not receive Pell aid, holding all other variables constant.

All first year performance indicators showed a significant relationship with the quality of interaction with other students. Students who were undeclared in their second semester reported a satisfaction rating that was, on average, .26 points lower than declared students, controlling for all other variables. Looking at the difference between credits attempted versus earned, with each one credit increase in the difference between credits attempted versus earned being related to a .04 decrease in the student's perception rating, on average. For each point increase in first year GPA, NSSE participants reported a drop of .18 points, on average, on the perception scale, holding all other variables constant. Overall, the model's predictive power is low, with an R^2 of .03.

Table 4.39

Linear Regression Analysis of Quality of Interaction with Students by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	5.58	.53		10.50	.000
Gender (1, Male)	-.01	.06	.00	-.08	.938
Race/Ethnicity					
Non-Resident Alien	-.22	.09	-.06	-2.42	.016
Unknown/Missing	-.09	.12	-.02	-.77	.441
Hispanic	.10	.10	.02	.93	.351
Asian	-.12	.09	-.03	-1.34	.179
Black	.11	.16	.02	.67	.506
Other Ethnicity	.00	.13	.00	.00	.996
Academic Preparation					
SAT - Combined (24)	.00	.02	.00	.07	.947
High School GPA	.20	.12	.04	1.69	.090
Financial Preparation					
Unmet Need Indicator	-.04	.08	-.02	-.55	.581
Pell Indicator	-.31	.09	-.09	-3.50	.000
Merit Indicator	-.02	.08	-.01	-.25	.805
Need-Based Indicator	-.08	.10	-.03	-.81	.420
Student Loan Indicator	.08	.08	.03	.97	.334
LLP Type/Choice					
Honors LLP	.24	.18	.04	1.33	.183
Academic LLP	-.06	.09	-.02	-.64	.525
Special Interest LLP	-.05	.22	.00	-.22	.826
LLC Choice Indicator	.11	.12	.03	.91	.362
First Year Performance					
Undeclared - Semester 2	-.26	.08	-.07	-3.20	.001
Credits Attempt Less Credits Earned	-.04	.01	-.07	-2.97	.003
First Year GPA	-.18	.07	-.07	-2.45	.014

Note: $R^2 = .03$, $F(21, 2131) = 2.90$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Regression Analysis - Quality of Interaction with Faculty

To examine how demographic indicators, academic and financial resources, LLP participation, and first year interaction indicators might be related to a student's perception of his or her quality of interaction with faculty, linear regression was employed. Results of the regression analysis, detailed in Table 4.40, were significant ($R^2 = .05$, $F(21, 2101) = 4.73$, $p < .001$). Of the total 2,328 records, 2,123 (91.25%) were included and 205 (8.8%) were missing cases.

Four variables showed a significant relationship with the quality of interaction with faculty. Among the demographic variables, three of the racial/ethnic categories were retained as significant in the regression equation. Students who identified as Non-Resident Alien or Asian provided perception scores that were .35 and .39 points lower on the perception scale, on average, than students who indicated that they were White, respectively. Students for who no race or ethnicity was recorded had quality of interaction scores that were .36 points lower, on average, than students who identified as White, when controlling for all other variables.

Of the first year performance variables, cumulative first year GPA showed a significant relationship with the quality of interaction with faculty rating.

Specifically, for each point increase in first year GPA, there was an increase in perception rating, on average, of .43 points. Overall, while the predictive power of this model was low, similar to that of the quality of interaction with students, with an R^2 of .05.

Table 4.40

Linear Regression Analysis of Quality of Interaction with Faculty by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	4.55	.56		8.10	.000
Gender (1, Male)	.04	.06	.01	.60	.546
Race/Ethnicity					
Non-Resident Alien	-.35	.10	-.09	-3.54	.000
Unknown/Missing	-.36	.12	-.07	-2.95	.003
Hispanic	-.13	.11	-.03	-1.16	.248
Asian	-.39	.09	-.10	-4.27	.000
Black	.01	.17	.00	.08	.934
Other Ethnicity	.09	.14	.01	.63	.530
Academic Preparation					
SAT - Combined (240)	-.02	.02	-.02	-.90	.371
High School GPA	-.06	.13	-.01	-.49	.628
Financial Preparation					
Unmet Need Indicator	.00	.08	.00	-.05	.959
Pell Indicator	-.12	.09	-.03	-1.28	.201
Merit Indicator	.00	.08	.00	-.05	.957
Need-Based Indicator	-.04	.10	-.01	-.38	.703
Student Loan Indicator	.01	.08	.00	.12	.901
LLP Type/Choice					
Honors LLP	.26	.19	.04	1.38	.168
Academic LLP	.05	.09	.01	.53	.597
Special Interest LLP	.35	.23	.03	1.49	.137
LLC Choice Indicator	-.01	.13	.00	-.12	.907
First Year Performance					
Undeclared - Semester 2	-.16	.09	-.04	-1.85	.065
Credits Attempt Less Credits Earned	.00	.02	.01	.32	.749
First Year Cumulative GPA	.43	.08	.15	5.62	.000

Note: $R^2 = .05$, $F(21, 2101) = 4.73$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator).

In the models for quality of interaction with students and faculty, only two variables are shared. NSSE participants who were Non-resident Alien had lower perception scores on average than students who identified as White in both models, when controlling for all other variables. First year GPA was also significant in both models. Higher first year GPA was positively related to quality of interaction with faculty, but negatively related to quality of interaction with students, when controlling for all other variables.

Regression Analysis – Evaluation of Overall Experience

To examine how demographic indicators, academic and financial resources, LLP participation, and first year interaction indicators might be related to a student's evaluation of their overall experience at BU, binary logistic regression was employed. Two regressions were performed in order to analyze differences in the categorical responses to the question, using indicators of an excellent rating, which accounted for 36.7% of total responses, and an indicator of either a good and excellent rating, which accounted for a total of 87.0% of total responses, as dependent variables. Regression analysis using an indicator of poor rating as a dependent variable was not significant and omitted from this study, $\chi^2 (26) = 32.28, p = .055$.

Results of the regression analyses are shown in Tables 4.41 and 4.42. The model predicting a rating of excellent as opposed to the other three categories was the stronger of the two models, with a Nagelkerke R^2 coefficient of .10, as

opposed to a Nagelkerke R^2 of .07 for the model predicting a rating of good or excellent.

For the model predicting a rating of excellent, analysis showed that students from four of the racial/ethnic categories showed statistically significant differences in their evaluation of overall experience, compared to students who reported themselves as White. Non-Resident Alien students were, on average, 62% less likely than White students to provide BU with a ranking of excellent, holding all other variables constant. Students whose race/ethnicity was Unknown or Missing were, on average, 55% less likely to provide an excellent ranking than students who identified as White. Asian students were 58% less likely to provide an excellent rating compared to White students. Finally, students who were categorized as Other Race/Ethnicity were 40% less likely than White students to provide an excellent rating. While student whose race or ethnicity was Unknown or Missing had a similar likelihood of providing a good or excellent rating as excellent alone, the difference in the other ethnic categories and White were reduced in the second model. Students who identified as International or Asian students were 46% and 47% less likely than White students to provide either a good or excellent rating. There was no significant difference between Other Race/Ethnicity and White students in this model.

Table 4.41

Binary Logistic Regression Analysis of Evaluation of Institution as Excellent by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables

Variable	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	.11	.10	.268	1.12
Race/Ethnicity				
Non-Resident Alien	-.97	.17	.000	.38
Unknown/Missing	-.79	.20	.000	.45
Hispanic	-.17	.17	.322	.84
Asian	-.87	.15	.000	.42
Black	-.14	.26	.594	.87
Other Ethnicity	-.51	.22	.019	.60
Academic Preparation				
SAT - Combined (00s)	-.02	.04	.691	.99
High School GPA	.46	.21	.029	1.58
Financial Preparation				
Unmet Need Indicator	.16	.13	.238	1.17
Pell Indicator	-.16	.15	.298	.86
Merit Indicator	-.08	.13	.513	.92
Need-Based Indicator	.03	.17	.846	1.03
Student Loan Indicator	.28	.13	.033	1.32
LLP Type/Choice				
Honors LLP	.65	.30	.029	1.92
Academic LLP	.06	.16	.703	1.06
Special Interest LLP	.31	.38	.423	1.36
LLC Choice Indicator	-.22	.21	.276	.80
First Year Performance				
Undeclared - Semester 2	-.51	.15	.001	.60
Credits Attempt Less Credits Earned	.00	.03	.965	1.00
First Year Cumulative GPA	.51	.13	.000	1.67
Constant	-3.41	.92	.000	.03

Note: Nagelkerke $R^2 = .10$, $\chi^2(21) = 165.10$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

Table 4.42

Binary Logistic Regression Analysis of Evaluation of Institution as Good or Excellent by Gender, Race/Ethnicity, Academic and Financial Resources, LLP Participation and Choice, and First Year Participation Variables

	B	S.E.	Sig.	Exp(B)
Gender (1, Male)	-.12	.14	.402	.89
Race/Ethnicity				
Non-Resident Alien	-.62	.21	.003	.54
Unknown/Missing	-.73	.25	.004	.48
Hispanic	-.18	.26	.496	.84
Asian	-.63	.20	.002	.53
Black	-.02	.40	.952	.98
Other Ethnicity	.01	.35	.976	1.01
Academic Preparation				
SAT - Combined (00s)	-.08	.05	.119	.92
High School GPA	.19	.28	.497	1.21
Financial Preparation				
Unmet Need Indicator	-.20	.20	.317	.82
Pell Indicator	-.07	.22	.732	.93
Merit Indicator	-.28	.18	.117	.75
Need-Based Indicator	-.53	.25	.036	.59
Student Loan Indicator	.69	.19	.000	2.00
LLP Type/Choice				
Honors LLP	.95	.50	.058	2.58
Academic LLP	.44	.24	.061	1.55
Special Interest LLP	.33	.52	.527	1.39
LLC Choice Indicator	-.43	.30	.147	.65
First Year Performance				
Undeclared - Semester 2	-.44	.18	.013	.64
Credits Attempt Less Credits Earned	.02	.03	.442	1.02
First Year Cumulative GPA	.78	.17	.000	2.18
Constant	.80	1.24	.520	2.22

Note: Nagelkerke $R^2 = .07$, $\chi^2(21) = 84.20$, $p < .001$

Reference Group for Race/Ethnicity = White

Reference Group for LLP Type = Traditional Housing (and non-choosers for LLP Participant Indicator)

High school GPA was also a predictor of an excellent rating for BU, holding all other variables constant. For each point increase in high school GPA, the odds of a student providing an excellent rating increased by 1.58, or 58%. When considering predictors of a rating of either good or excellent, high school GPA was not significant.

Among the financial resource variables, only receipt of student loans was significant related to rating the institution as excellent, when compared to those students who did not receive loans. Holding all other variables in the equation constant, students who received non-private loans were 1.32 times, or 32% more likely to rate the institution as excellent, compared to students who did not receive loans. This relationship strengthened when evaluating predictors of either a good or excellent rating. Students who receive private loans were twice as likely to evaluate their experience with the institution as good or excellent than students who did not receive loans. In contrast, students who received need-based grant aid were 41% less likely to rate their experience as good or excellent than students who did not receive this aid, holding all other variables constant.

Looking at LLP participation, students in honors programs showed the only significant relationship with evaluation of overall experience, when compared to students in traditional housing. Honors students were 92% more likely, on average, than students in traditional housing to rate their experience as excellent, when controlling for all other variables. When modeling to predict the likelihood

of a rating of either good or excellent, LLP participation is no longer significant.

Astin (1997) noted that student perceptions are important outcomes that are shaped by a student's interactions with the college environment. Using Astin's model, when controlling for student inputs such as demographics, pre-college academic experience, and financial resources, the data indicate that the student experience in the honors LLP is significant in shaping overall perception of the college. When the threshold of experience is lowered, including both "good" and "excellent" ratings in the dependent variable, students are statistically as likely to provide one of these two ratings as students in any other housing type.

KHC, which accounts for the majority of the honors LLP participation, has a number of resources that are unique to that program, including dedicated honors advisors, required honors coursework, and co-curricular programming, in addition to residing together. The combination of this level of academic and social support, while not providing a distinguishing experience specifically for student or faculty interaction, likely serves to create an environment that students are more likely to perceive as excellent.

Of the first year performance indicators, both undeclared status and cumulative GPA were significantly related to a student's evaluation of their overall experience. In particular, students who were undeclared in the second semester were 40% less likely to evaluate their experience as excellent as those students with declared majors, holding all other variables constant. When considering a

rating of good or excellent, this relationship continues to be significant, with undeclared students being 36% less likely to rate the institution as good or excellent as declared students. In regard to first year GPA, the odds of providing a rating of excellent increased by 67% with each point increase in GPA. When predicting a rating of either good or excellent, the effect of this relationship doubles, with the odds of students providing a rating of good or excellent increasing by 118%.

Research Question 4

The following section contains analyses pertaining to the fourth research question explored in this study. The question is as follows:

How do the students' academic and social perceptions correspond with the point of view of LLP advisors and student resident assistants?

Qualitative analysis of this research question was accomplished through the use of thematic analysis. The section below describes the 16 participants interviewed as part of this study, as well as the overall themes identified during analysis of the interviews with these faculty, staff and students who have working relationships with living learning programs at BU. Themes are marked as either guided based on the data provided for the participants to respond to or that emerged from subsequent conversation. Presence of emergent themes in the feedback of multiple participants provides support for generalization of these concepts to other LLP staff and faculty at BU, although this cannot be assumed.

From this analysis, five related themes were identified. These themes include sense of community, academic interaction, social interaction, placement of non-LLP students, and location and type of dormitory.

Participant Overview

In total, 16 participants contributed to this study, representing each type of BU housing considered in this analysis: academic LLPs, honors LLPs, special interest LLPs, and traditional housing. Participants included a mix of faculty and staff advisors and upper-class students who worked as RAs in BU's LLPs. The following section includes a description of each participant's role and experience within the BU housing system. While LLP type and general working relationships are noted, the names of the participants, LLPs, and other distinguishing characteristics have been removed to protect the participants' confidentiality.

Academic Housing Participant 1 (A1): A1 is a faculty member with several years of experience overseeing two different academic LLPs, one of which has multiple sites in both brownstone and dormitory floor locations.

Academic Housing Participant 2 (A2): A2 is a student RA with less than one year of experience in the role at the time of the interview. This was her first year residing in an LLP.

Academic Housing Participant 3 (A3): A2 is a faculty advisor with less than 5 years of experience in the role. She worked with A1 as advisor to both a house and a floor belonging to the same program.

Academic Housing Participant 4 (A4): A4 is a student RA with less than one year of experience in the role at the time of the interview. He worked with both A1 and A3 as an RA for the program house. He was an international student who was placed as a resident of a special interest LLP in his freshman year, and chose to remain in his sophomore year.

Academic Housing Participant 5 (A5): A5 is a student RA with one year of experience in the role at the time of the interview. She opted to be a resident of the same LLP in her first two years at BU.

Academic Housing Participant 6 (A6): A6 is a staff advisor with two years of experience in the role.

Academic Housing Participant 7 (A7): A7 is a student RA with one year of experience in the role. He was an international student who chose to participate in the LLP that he currently manages in his freshman and sophomore years.

Faculty-in-Residence 1 (F1): F1 is a Faculty-in-Residence in one of BU's undergraduate dormitories. In his role, he is responsible for creating a residential college experience for undergraduates in his area, which includes both LLP participants and traditional housing students.

Honors Housing Participant 1 (H1): H1 is a staff academic advisor who has been working with the program since it began. In her role, H1 interacts regularly with H2, H3, and H4.

Honors Housing Participant 2 (H2): H2 is a faculty advisor who has been working with the program since it began. In his role, H2 interacts regularly with H1, H3, and H4.

Honors Housing Participant 3 (H3): H3 is a staff advisor who has been working with both honors and special interest programs. At the time of the interview, she had several years of experience with LLPs. In her role, H3 interacts regularly with H1, H2, and H4.

Honors Housing Participant 4 (H4): H4 is a student RA with one year of experience. In her first three years at BU, she chose to be a resident in the same program. In her role, H4 interacts regularly with H1, H2, and H3.

Special Interest Housing Participant 1 (T1): T1 is a staff advisor with experience in managing both house and floor LLPs. She had several years of experience with LLPs at the time of the interview.

Special Interest Housing Participant 2 (T2): T2 is a student RA with less than one year of experience at the time of the interview. He worked with T1 as the RA for the program house. He was a traditional housing resident prior to becoming an RA.

Special Interest Housing Participant 3 (T3): T3 is a student RA with more than one year of experience at the time of the interview. She worked with T4 as the RA for the program floor. She was a traditional housing resident prior to becoming an RA.

Special Interest Housing Participant 3 (T4): T4 is a faculty advisor for a program floor. He had several years of experience with the LLP at the time of the interview.

Theme 1: Sense of Community (Emergent)

The concept of creating or feeling a sense of community was an emergent theme that was mentioned by 10 of the 16 participants. The idea was not specifically related to social or academic interaction, but expressed in order to convey the notion that creating community among students is important in the undergraduate experience.

BU Campus

Half of the interview subjects noted that the size of BU can inhibit interaction, making it difficult for students to form connections. Comments were in reference to BU's physical size, at 134 acres spread predominantly over a 2-mile stretch of Commonwealth Avenue in Boston, as well as its complexity, with seventeen schools and colleges and a population of 9,978 staff and 33,119 students (OIR 2015).

Campus size was referenced in response to questions concerning student departure. Participant A3, a faculty advisor, provided her experience with student attrition:

Personally, the reason is the size of the campus. That's the number one reason that I see, of my small sample of students who I've written transfer letters for, it's the size of the campus, just kind of being too big.

A2, student resident assistant for a floor LLP, reflected a similar experience:

A lot of problems I've heard people had from BU, is they feel really small, and they feel like the administration isn't listening and they have no connection to faculty, and they have not connected to BU at all. They just feel lost, and with [the Academic LLP], that's less of an issue...

Both of these participants reflected the theme, indicating their belief that creating smaller circles of interaction within the larger BU community, either through class size or LLP interaction, provides students with a better chance of forming the connections needed to be successful.

Too Many Choices

In addition to the size and complexity of the campus, BU also provides a diverse array of academic and social programming for students. While this is typically beneficial in helping students connect with others with shared interests, participants identified this as overwhelming for new students, and may actually inhibit interaction. As F1, a faculty resident advisor noted, "Whatever you do you, always compete against X number of things, and the students are constantly

bombarded with things.” H2, an honors LLP faculty advisor, reflected a similar idea, stating, “It’s that they like Boston, they like the university, they have a lot of choices here, but then they get here and often times it’s now what? What do I do?”

A4, a student resident assistant, offered a more detailed explanation of the issue, and how it pertains to both academic and social interaction. She stated:

You get your attention divided between too much stuff. That, I think, include majors as well. We have people come here undeclared, let’s say, and then have a lot of classes to choose from, which is a good thing in my opinion, but then it may add to the fact that people don’t feel as big a part of the community because they’re not taking classes with the exact same people. They may end up seeing them once or twice a year. I think the idea of community adds to your experience in the overall university, and maybe that’s why they would choose another institution.

Creating Communities Within a Community

As A4 noted, creating a sense of community is a way of combatting the issues related to the size and complexity of BU. The idea of creating a smaller and more manageable community within the larger one was reflected in comments by half of the participants, representing each type of LLP. A smaller, more manageable community within the larger institution was deemed as advantageous for students, particularly new students or those with difficulty fitting in, by maximizing a student’s opportunities to interact with individuals with whom they can form academic or social connections. Participants indicated that LLPs

provided a vehicle for establishing these smaller communities by grouping students with shared interests in a common housing space. For example, T3, a student RA in a special interest LLP, highlighted the benefit of shared interests in creating connections among students:

...They have that connection because of what they like to do and they happen to be neighbors, because of what they like to do. It puts a lot of like-minded people together, which is really nice. Especially at a really big school, like BU, where you can feel that sometimes, you don't have anything in common with anyone in the room.

Participants tended to view their LLPs as a safe zone from which students could explore and integrate into the larger community. By having an established group of peers, students feel more empowered to experiment with different campus experiences. As H1, a staff advisor in the honors LLP, described:

I feel it's kind of built in, because this a big school, you have a built in community of people who have similar interests to you and I think, kind of branch out in different clubs, activities, groups, classes as you liked and then make friends and have other groups of people you spend time with. I think it's comforting for them to come here and have this group of people.

Participants also recognized LLPs as an avenue for creating a student identity, which can be challenging on a large campus. H2 noted that a sense of identity helps with connectivity among students which helps to combat feelings of anonymity or isolation:

This gives you something to bond with. As [Honors LLP] students they have a very strong sense of identity. That's a hard thing here,

especially in the bigger colleges. I don't think it's just BU. I think, well I think they're in that box too. What we are in campus. The very long and drawn out urban campus. The relative lack of common spaces. The fact that a lot of them end up living off campus. The fact that with all the schools, the activities, there is something which is dispersed about it. Dispersed about faculty too. I think that is a significant public aloneness that students have.

In discussing the benefits of LLPs, participants who had worked with more than one type of housing noted that merely establishing an LLP does not ensure that a sense of community will be developed. For example, A4, who had participated as a student and as a resident assistant in academic and special interest LLPs, noted that academic LLPs have an established sense of commonality through the requirement of a shared major or minor, whereas special interest LLPs require effort in the form of programming to create opportunities for camaraderie among students. He noted:

The main reason why the academic community is more interested is because people are connected by something already...In the special interest you don't have that. Unless the people there make it interesting for you, unless the residents themselves are invested...If you don't have anything like that, then your experience in the community becomes less involved, and because of that you don't want to return.

Other participants noted that traditional dorms provide a similar construct, since freshmen are typically assigned to common housing locations such as Warren Towers, a centrally located dormitory with a housing capacity of 1,600 students (BU Housing, n.d. a). By grouping freshmen into a shared living space, students would garner similar advantages to an LLP by living in close proximity to students

with the shared experience of being new to the institution. As F1 noted:

[LLPs are] structurally easier and I can see how it really forms a very tight sense of cohesion among students. It's their home. But so does Warren [Towers Dormitory], because Warren really is kind of the, I call it the mother ship because when you're a freshman you're still pretty limited in Boston. You can't go drinking, you can't go out to bars. Most people actually don't go to movies because it's too expensive. So what do you do, especially during winter? Most of the time between October and April there's winter. It becomes this kind of an extended boarding school.

People really love hanging out at Warren. They do everything there. They eat there. There's a big cafeteria. They do laundry there. They have their mail room there. They have their entertainment rooms there. They have study rooms there. They have game rooms. They have a music room. They really have no reason to go outside, and a lot of them don't want to.

Warren Towers was used as the example of the traditional freshman housing experience, mentioned by 12 of the 16 participants. By choosing an LLP, new students are effectively choosing a smaller, more personalized experience, different from a larger freshman dormitory such as Warren. In choosing this experience, one disadvantage identified by interview participants is that these programs may not reflect the experience envisioned by entering students in the way that living in Warren Towers might by giving freshmen access to a broader community. As H4 notes:

[Honors LLP is] a four year program so it helps us to get to know each other but, at the same time, it kind of isolates the community a little bit from the rest of the BU community because they know that the majority of freshman, they live in Warren and west campus and that's like a defining freshman experience for many people.

Participants also highlighted that the nature or location of the LLP may detract from a student's perceived experience. For example, A5, who was the student resident assistant in an academic LLP located in a brownstone, noted that the close quarters of the Bay State location may provide students with a more supervised experience than in a larger dorm. She notes:

A disadvantage, I know freshman, sometimes they want the typical Warren Towers, "everybody, everywhere, all the time" experience and this isn't like that. They can't get away with anything, because I'm right here...I can hear everything, if they're looking for something more like, "Woohoo, freshman year," they're not going to find it here.

In total, interview participants highlighted the necessity of creating opportunity for freshman interaction and engagement within the larger BU community. Also noted, however, was the importance of matching expectations with the reality of the LLP or housing experience, in order to ensure that students understand the community in which they choose to reside, which can be as important as the school they choose to attend.

Theme 2: Academic Interaction

Academic interaction was a guided theme, resulting from specific questions in the interview protocol. Interview participants were asked to reflect on opportunities provided to LLP residents for academic interaction, as well as to respond to data from the NSSE survey about the LLP resident's satisfaction with their interaction with faculty and with BU overall. Interview participants reacted to

the percentage of students that rated the quality of interaction with faculty by type of LLP as either a 6 or 7, the top two possible scores. These percentages ranged from highs of 58.2% and 50.0% of participant ratings for honors and special interest LLPs to 44.0% and 44.6% for academic LLPs and traditional housing. Interview participants were also presented with mean scores for their specific LLP. As indicated previously, the scores were not statistically significant due to small number of students included, and perception may not have been related specifically to the LLP itself, but they provided an opportunity for the interview participants to relate their experiences, both positive and negative, with faculty interaction through the LLP.

Student-Faculty Interaction

In general, interview participants attributed the student's perception of their quality of interaction with faculty to the level of availability of faculty to the LLP students outside of the classroom and as an extension of their curricular experience. Interview participants from the honors LLP, which had the highest percentage of students provide a rating of excellent on this measure, highlighted that the close interaction between students and faculty was supported by the residential college format of the program. H3, a staff advisor, described this type of interaction as unique at BU:

They have immediate access to [faculty], which I think is different than a lot of other colleges where you might have to make an appointment with an advisor. You may just run into your faculty...

as you're walking through the lobby and stop and ask them a question.

Creating an environment that increases the frequency of interaction between faculty and students produces a greater sense of familiarity between the two groups, resulting in easier communication. H2 described the sense of informality of interaction in the honors LLP environment, where students and faculty are on a first name basis:

It's quite funny that very often when the seniors are doing their project, they have to write to me and to their advisor, and to the professor in the senior course. They all write 'Dear [H2 – first name], and Professor so and so, and Professor so and so'. Okay, that's the way things are here. Not everyone, but it's largely a very informal place. That I think is one of the impacts that the residential aspect, but it also depends on who's in charge, on their personality.

Interaction with faculty outside of the classroom was highlighted as advantageous in an LLP setting. For example, A5 described a holiday party attended by both students and faculty that involved dinner and craft activities, allowing the two groups to interact in a non-classroom environment. Though LLPs can facilitate student-faculty interaction, opportunities are also available to students in traditional housing. As F1 described, faculty resident advisors located in traditional housing host student events such as movie and game nights. He noted that students seek out faculty interaction as an alternative to student interaction:

I think the students definitely appreciate that we are older and that I'm a professor. They want to come. They seek us out because

they want to spend time with a professor. They don't want to spend time with an RA. They want to spend time with a professor. And then it's like, wow, this person is adult. He's like way older than I am. That's very interesting to them. They overdose on people of their age, and so being with us is a little bit like, we're a little exotic to them. We're their parents, except we're not, so it's great. Also I have an academic background, but I think that's more of a broader thing.

As F1 highlighted, if the opportunities are made available, students in traditional housing who are motivated to participate can experience the advantages of programming that provides similar informal faculty interaction that LLPs facilitate.

Integrated Curriculum

As previously noted, a key feature of many living learning programs is the integration of a course or courses specific to the LLP and taken for credit, bringing the academic experience into the living environment. Introducing academic content in this way is beneficial to both student and faculty participants. Students get a unique bonding and learning experience while faculty receive credit towards their teaching requirements. Combining for-credit courses with LLPs was mentioned by 5 of the interview participants, representing each type of LLP. At the time of this study, only two LLPs had specific for-credit courses attached to them, with the remaining connected through common majors, minors, or interests.

H1 reflected on the interaction between students generated by the required course component specific for honors program participants:

They start meeting each other at the beginning of their first year, which is tough. I think there's that too. Just that aspect and living here, studying together, writing papers together, asking each other's opinions on things. I think it does help them to have a shared experience because I think just living together and having similar interest, that might not be what you're spending your time talking about or doing. ...I think that they do spend a lot of time talking about it and engaging with it. What are you doing? What are you learning? What is your class about? I think it gives them something to really talk about.

Reflecting a similar idea, A2, a student RA, also noted that having LLP participants share a common class helps her develop programming for her residents. Working with the course instructor allowed her to develop social programs that complemented the curriculum. T4, recognizing the benefits of credit integration with the LLP, also indicated support for the concept, although his efforts to incorporate a course into the LLP he advises had not occurred at the time of this interview. As he noted:

I actually believe in residential education or with overlapping residential education and the actual curriculum to the extent that I ... Five or six years ago, I proposed having all students who lived on the same floor all take the same [subject] class. It didn't fly. There were complications. I just thought it would bring a kind of ... bring a kind of density or intensity to the students education where they would be socializing with each other because they lived near each other but also that would be informed by this one intellectual experience.

Common Academic Purpose

While not all programs involve an integrated course, the majority do involve a shared curriculum or learning experience among first year students, who, particularly in academic LLPs, will take the same courses. Shared academic

interests and goals were highlighted by three participants as a driver for academic integration in their LLP. As A4 observed, being part of the same academic program as his residents provides him with an advantage in making connections with those students. He noted:

Interacting with people who are already in [the academic program] is much easier for me because we share the same experience or if not, very similar experience. Why? Because I was part of the [program] as well. I can relate to the book they're reading, I can relate to what they started. I can relate to professors that they are taking, and we can discuss professors...I can relate to them much more than to people who are not taking [the academic program]. I can relate to them in the terms as a BU student and just an RA using those resources, but I don't have the same collective experience just from the start.

The idea of common academic purpose also extended into the special interest LLPs, which are not built around a shared major. T1, a staff advisor, noted that the special interest LLP that she advises was most effective when the students took ideas generated by interaction with faculty and students in organized events back to the LLP. She noted:

It was wonderful...when it extended from here to the house and the conversations continues without always having an adult or a faculty member. When they were doing it themselves. They created some of their own programming to build a family-like environment...They really made it very family-like but I think part of that was because they were also involved with each other through programming.

LLP Supervision

Based on interview participants' comments, academic interaction within the LLPs appears to stem from the working relationship between the faculty advisor and

the resident assistant in determining the strategic direction of the program. The level of interaction appears to vary by program, with some LLPs having very strong faculty-RA interaction, as well as curricular or credit integration, and others being managed mainly by the RA, directed by the requirements of BU's Department of Residential Life. As previously noted, honors LLP RAs and faculty work closely, supporting program-wide academic programs.

For programs that had lower percentages of students rating the quality of interaction with faculty as excellent, interview participants typically referred to lack of ability or opportunity to create faculty events with LLP participants. As an example, the issue of coordinating student-faculty events was noted by both the student resident assistant and the faculty advisor of a special interest LLP. In this program, the student resident advisor, T3, is primarily responsible for student programming. She noted:

I've always wanted to work at a[n activity] with the professors, who support us ... We can never work it out with our schedules... I reached out to the advisors, "Would you like to do something [related to the LLP interest]." ...We just haven't been able to work it all. That's always a bummer. We have good ideas, but it just doesn't work with people's schedule.

The faculty advisor separately noted a lack of interaction with the LLP, and indicated that events were driven by both the RA and the level of interest of the participants. While the faculty tried to be responsive, they did not initiate events.

Three of the participants in both academic and special interest LLPs identified

the issue of generating faculty involvement in LLPs. Incentivizing faculty to give their time to LLP participants outside of the classroom was provided as the main reason for low faculty participation. As T4 noted when speaking of the program faculty advisors, LLP participation can take a back seat when it comes to balancing work and personal life and LLP participation: "They're teaching three full time teaching loads. Two kids. I think, from the point of view of faculty, getting involved ... There's not great incentive."

Student involvement in faculty events also acts as incentive for faculty participation. If the event organizers are unable to generate suitable participation, it becomes difficult to engage faculty to return for additional events.

As A3 noted:

The quality of interaction [with faculty], that we've been working on. This was my first year as the advisor and when we do faculty events and the students who come to these faculty events are so low. There's a low ambition to do them again.

Student-to-Student Interaction

While closer interaction with faculty outside of the classroom is a key benefit of a well formed LLP, student-to-student academic interaction is also a beneficial development of thoughtful program design. Interview participants noted that the groups created in the freshman year tend to persist through the students' career at BU. As A1 describes:

They help each other. They do study groups before the mid-terms, but they form this little group and they tend to stick together. The

groups that form first semester freshman year tend to be very cohesive and very often they'll carry through and be the people who are members of the [academic program group]... Yeah, those early associations make a big difference.

Some programs go a step further to provide structured student academic interaction by designating subject tutors who live with the LLP residents. A2 describes the advantage of this practice as making curricular assistance more accessible through peers, who can appear less formidable to approach than faculty. She noted:

I think that's an interesting piece of it that I think is specifically beneficial because a lot of freshman are very scared to go in open hours. They tell me, "How do I talk to a professor," or "What do I do", so having [tutors] on the floor who become like a bridge almost, because it's less scary to go see a faculty in residence or a faculty about tutoring if you've already seen your mentor. Having that access, I think, is very beneficial.

Theme 3: Social Interaction (Guided Theme)

Like Academic Interaction, Social Interaction was also a guided theme based on the protocol followed during participant interviews. As in the previous section, interview participants were asked to respond to data from NSSE about the LLP residents' satisfaction with their interaction with fellow students as well as with BU overall. Interview participants reacted to the percentage of students that rated the quality of interaction with students by type of LLP as either a 6 or 7, the top two possible scores. These percentages ranged from highs of 74.5% and 64.9% for honors and special interest LLPs, respectively, to 55.5% and 59.5% for

academic LLPs and traditional housing, respectively. Interview participants were also presented with mean scores for their specific LLP, though not statistically significant, to stimulate conversation about their observations of social interaction within their LLP. From these recollections, several ideas emerged related to social interaction, including the cohesiveness of freshman groups, the formation of “cliques”, and interaction with upperclassmen.

Cohesive Freshman Groups

Eight of the 16 participants commented that their LLP was beneficial in creating social groups for incoming freshmen. Participants highlighted that a commonality of purpose brought by LLP participation gave the incoming students something specific to communicate about and to form bonds around. As A7, a student RA, noted, having students with similar interests in your home environment provides an opportunity for easy interaction and friendships. He commented:

My floor is [an academic LLP]. We had split the team, freshmen and sophomores. They tend to be friends for the next 3 or 4 years. In the few classes that all [subject students take], in those classes they're able to work together. Instead of going to [another part of campus] or going somewhere else to find friends, they had their friends and their other classmates on their floor already implanted. I think that was really helpful.

This comment mirrors the insights of participants with longer-term LLP interactions, spanning more than two years. For those who are able to monitor students' progression through their academic career, they note that the social bonds created in the freshman year tend to be stable and foundational. As H1,

who had with several years of experience with her LLP, noted:

...Seniors say, I met my best friend here, I met my boyfriend here. I met all of my friends, all their friends from BU were in [the LLP]. They lived together their first year. I think that's huge. Like I said when they move off campus, they move around, they still live with one another, even if they're not living here.

H2 also noted the cohesiveness of the LLP community. In addition to creating opportunities for social interaction, H2 noted that the groups that formed provided more support and general acceptance of each other that they might not otherwise find among casual acquaintances. In particular, the setting can be advantageous for those students who might have difficulty making friends otherwise, due to shyness, introversion, or other issues. As H2 noted:

I think the advantages of being part of the community are huge for them. They are very close to each other. One thing which is interesting is they are basically very, very tolerant of each other. ...They are for the most part, with a few exceptions, very understanding of each other.

Having the right mix of students is key to facilitating social interaction. As interview candidates repeatedly noted, having a shared interest increases the likelihood of social connection because students have established common basis for interaction. In addition, social tolerance and openness for interaction is necessary. As T3 noted, the students on her floor were a mix of introverted and extroverted personalities, with the latter being adept at creating opportunities for inclusion. T3 described:

There's good community on the floor. I will tell you, it was better last year when [NSSE] was happening, than it is this year. I think, for one part that was because I had half sophomores and half freshmen. The sophomores were super friendly and really good about getting freshmen out of their rooms. The freshmen were excited to do stuff. There were a lot more people coming to my [LLP] events. There was a lot of, "Oh, you know this person. Oh, I know them, and now we're all friends."

Cliques and Social Groups

Even with the ideal mix of students and establishing a common interest, facilitating social interaction within an LLP still has barriers and downfalls. Interaction can lead to shared negative experiences and attitudes as well as positive ones. As an example, H1 identified a form of negative social interaction that existed among a previous class of honors LLP students. As H1 described:

I think back to something I would say negative about living here is the snowball effect of one person having an opinion and it spreads. One person goes, "this isn't great for this reason" and then it's kind of this group mentality.

Strong social groups become better conductors of negative experiences as well as positive ones. While this behavior can occur in any type of housing format, LLPs can increase the likelihood of social bonding by orchestrating grouping of students with shared interests and attitudes. Groups of students with strong social bonds can also share and reinforce habits within each other that can negatively impact their college experience. As H1 noted:

You have a lot of students in the same fields who tend to psych each other out. Not that they're competitive with one another but they openly share scores, grades and things like that so it can

kind of be a little hard for stress when they all start talking about it. Who studies more? Who pulled more all-nighters? They kind of compare and it's a badge of pride with who worked the hardest, studies the hardest, does the most, spends the most hours and things like that and so that kind of competition of who's working the hardest or who appears to be working the hardest can get a little intense.

Openness to social interaction is not necessarily guaranteed by established shared interests. In addition to potential negative reinforcement of social groups, breaking into existing or strongly connected social groups can be particularly difficult for new students. One interview participant, T2, a student RA in a special interest LLP, called this idea "Social Critical Mass". As he described:

I have this idea that I call "Social Critical Mass" and it's kind of my philosophy about people who initially come to campus and who come to a new environment, and they want to make friends. So they try to get a whole bunch of people who are just like them, and they want to make friends, and they try to make a group. Let's say that group is about five or six people, right? But at a certain number, those students stop wanting to accept new people into their group, and that is when the group reaches their social critical mass. At that point, no one can really enter it, and that makes it harder for other students who feel alone to try to burst into that bubble.

The concept of cliques or social groups was raised by five of the 16 participants. Most frequently, this concept was related to upperclassmen, who have had more time and experience in creating a social environment for themselves than entering freshmen. As A7 noted:

[Sophomores] have their cliques already. They have their friends in their own suite. They don't need to open the door for everyone else. I noticed that when I was a freshman living in [a dormitory].

Luckily, I have friends who are very welcoming. I was able to go in their social group but I noticed this year that that wasn't the case. A lot of freshmen there fell out of the loop.

Interactions with Upperclassmen

Creating opportunities for interaction between freshmen and upperclassmen has both benefits and difficulties. As previously noted, upperclassmen tend to have more established social networks, making it difficult for new students to join their group of friends. As A1 noted, in describing freshmen who request housing on campus brownstones on BU's Bay State Road:

They think that they've done a great thing by getting in a brownstone. They're single. They're on their own. I've heard this from any number of students; of course what happens is they're with upper classmen and they were great. They were perfectly nice, but they already have their own social group.

LLPs housed in the brownstones, row-house style dormitories located along Bay State Road on the BU campus, were noted by interview participants to have a unique set of advantages and complications, compared to floor-style housing. Due to their location, architecture, and availability of less congested housing options, they are a popular on-campus housing choice among BU students. Because of this, freshmen housed in brownstones are likely to be living among a higher concentration of upperclassmen as opposed to freshmen-specific floors and dormitories. T2 highlighted the differences in managing freshmen floors compared to mixed population brownstones:

There is a big difference between being an RA for a dormitory and a freshman area as opposed to being an RA for an upperclassmen dorm like Stu-Vi I or the Brownstones because the thing is, the higher up you go, you'll have less reports to do because students are a little more mature than when they get here so that they aren't making as many rash decisions, so their interaction with each other will be less because they already have their groups. Whereas a freshman, they are completely happy to meet people. It's like a brand new experience. They'll go to the floor events and they'll have a strong relationship with their RA, but they'll make a lot of mistakes that freshman year too.

This theme was highlighted by interview participants across all types of LLPs. Though upperclassmen are not malicious or actively creating barriers to social interaction with new students, these barriers exist when freshmen are in the minority in either LLP or traditional housing situations. As A7 observed:

The sophomores that were on my floor were all friends before. They were always hanging out together. It was hard for freshmen to break into that group. I can definitely see why the students would feel lonely sometimes because they're always doing work. When they're not doing work, it's hard to socialize with people on your floor if they're all sophomores and already have their friends.

Upper Class Role Models

As with all interactions noted here, the right circumstances are necessary to facilitate positive social experiences. Interview participants working with LLPs that had a more balanced participation of freshmen and upperclassmen noted that mixing new and more experienced students provided the ideal environment for mentoring. These opportunities were more prevalent among academic and honors LLP participants that share a common curriculum. A1 highlighted this as

a strength of the LLP that she oversaw when she noted:

The thing about the [LLP program] is they actually all read the same books so they actually always, a freshman and a senior have something in common because the senior will have [had the same academic experience]. Again, as I say, even if they're belly-aching about, gosh, I couldn't stand that, they automatically have a community when they're coming in. I think there is a little big sister/ little sister, brother thing going on there as well.

In the honors housing, H1 noted that upperclassmen have a calming effect on freshmen. H1 highlighted that intentional placement of upperclassmen in both housing location and in event planning is beneficial to the community because they act as positive role models for new students. In describing methods for mitigating stress felt by new honors students in pursuing academic achievement, H1 highlighted upperclassmen as one intervention. She noted:

The upperclassmen try to calm them and really try to show them that they don't need to be climbing the ladder, showing off for each other who's studying the most and things like that. We have continuing students who also live [on floors] with the freshmen in standalone rooms and then they live on the [other] floors as well, our upperclassmen. They're there and the students interact with them and we have social events. We have teas and study breaks and things like that. We have food and pizza and all of that so the upperclassmen, I think, try to make them feel as though they don't need to be constantly studying.

As with other forms of interaction noted by interview participants, having the right mix of interests and the desire to engage with each other are important components of social interaction. Well-organized LLPs have the potential to facilitate these social bonds.

Theme 4: Housing Style and Location (Emergent Theme)

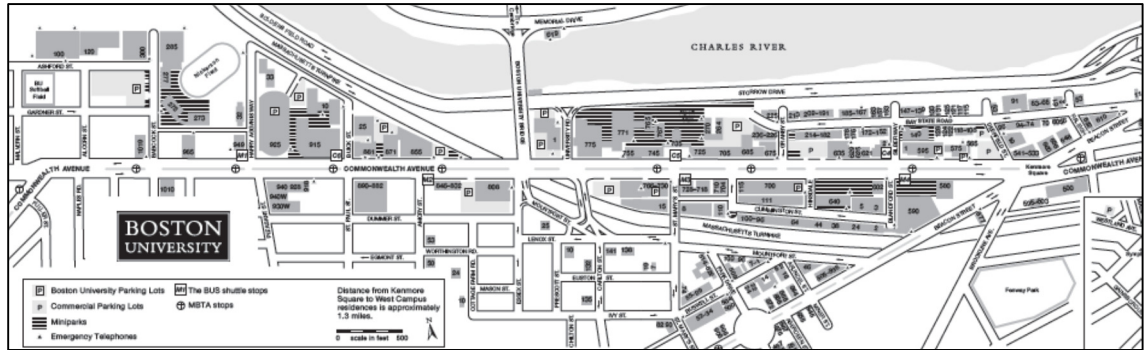
Discussion of the physical housing options available to new students was an emergent theme among interview participants. Eight of the 16 participants noted physical features associated with student housing as integral to the student's experience. As previously noted in the discussion of social interaction, the location and style of certain types of housing on the BU campus creates situations that can either promote or detract from the student's LLP experience. In addition, the presence of common space was raised as a necessity for LLP programming.

Location

Boston University's Charles River Campus is located predominantly along a nearly two-mile stretch of Commonwealth Avenue in Boston. Housing options are located along this route, including larger traditional style dormitories on the main thoroughfare and small brownstone residences along the tree lined Bay State Road. A map of Boston University's campus is available in Figure 2 (Boston University, 2013).

Figure 4.1

Boston University's Charles River Campus



Certain areas of campus appear to be considered more desirable than others by students, either in terms of aesthetics, proximity to their home school or college, or for the mix of student residents. Because of this, location of an LLP can be both an attractor and a barrier for participation. A1 noted the differences in opinions about the housing location among students, as it pertains to attracting students to housing programs in different areas. He stated:

South campus is right over Saint Mary's Street. For some reason, among the students, south campus has a bad name. It is five minutes from here...but they all want live on Bay State Road. That's a major issue.

As interview participants noted, Bay State Road has a reputation for being a sought after residential area. Students housed in brownstones, which typically accommodate 20-30 students, have a much more intimate environment. Half of the 2013 specialty communities at BU had a Bay State Road location, which can be a significant draw in terms of housing applications. It can be detrimental, however, to LLP participation, since the location may be more attractive to

potential LLP applicants than the goals of the LLP itself. As T3 noted:

A lot the time, the students that apply to live in specialty communities, like the [special interest LLP], the [academic LLPs] too, might not be doing it because they super care about [the LLP focus]. Sometimes it's more about just the real estate, basically.

Within the academic LLPs, A5 noted a similar issue. She described mixed results with LLP students who were more interested in the physical space than the intent of the program:

It's very like people can get a place and it can work out, but sometimes it's just if they don't want to be part of the community, they're like, "Cool, I get a nice room." They stay for a year and it's fine, but they're not very engaged.

Brownstone Experience

Interview participants provided different perspectives on student life in the brownstones, in terms of whether they provide the most beneficial location for new students. T2 reflected on the advantages of living in a brownstone as a first year student. T2, recalling a conversation with an LLP resident, noted:

One of the advantages is really that they get to feel more...not special but, they don't have to live in a huge dorm and they have more privacy in the brownstones. So they say they can get into the BU community and they can go to the dorms and have fun there but then they can come back home and have their own space that's away from that freshman euphoria, you know.

Because of the seclusion offered in a Bay State brownstone, which is sought after by upperclassmen, several participants noted that this layout does not

provide freshman with a needed opportunity to interact with their fellow residents.

T2 continued:

Even in my own house, the residents don't even know each other. I know everyone. They don't because they are living in a brownstone and they have separate floors and if you just go there to live, and you have all your friends outside the brownstone, there's no need. As opposed to in the dormitories, the architectural layout of a floor is created so that they each have their doors right next to each other, and they're all in the same hallway, so of course you're going to see other people go into their room. But it's very different when you are in the brownstone.

Because of the attractiveness of Bay State Road to upperclassmen in the housing decision process, interview participants expressed concerns that locating freshmen in these residences would not offer them the same opportunity to connect with other students as they would have if they resided in traditional freshman floor housing. A7 reflected that certain residences on campus are structured to facilitate interaction that would be more useful to freshmen. A7 noted:

I think it's better for freshmen to live in West or Warren usually because Myles or any place at brownstones or South, any place that encourages a suite life like four-person dorming (sic) doesn't help freshman students make friends.

This theme was reiterated by interview participants representing all types of LLP housing. H3, who oversees LLPs in both brownstone and floor formats, provided this experience of a freshmen in her brownstone LLP:

I think it can be very isolating being in the brownstone. We actually had students this year who asked to move out of the brownstone into [the floor-based LLP] because they were freshmen, because they felt that they needed more of that community. A lot of the older students used to live in the house. I think that freshmen really, beyond the need to connect with [the LLP], they feel the need to connect with other freshmen. I think their preference is to be in a community that is thriving in that area and then move into the house later on when they've established themselves here and feel acclimated and feel that they're not as isolated by being in a brownstone.

While the brownstone experience can be isolating to new students, this sense of isolation can be overcome through intervention by student and faculty advisors. In keeping with the LLPs goal of connecting students with similar interests in a smaller, more familiar environment, interview participants noted that academic and social programming and one-on-one contact can overcome barriers to interaction. A5 related such an experience with a first year student in her brownstone LLP, who had moved onto campus early to participate in pre-semester programming. A5 stated:

I think if somebody doesn't want to be here, then they're going to act like they don't want to be here. I think that that's huge...I had a student who was like, day one, "[A5], I need to get out of here." I was like, "I just met you. What's the matter?" He was like, "I can't do this, this is so small. I'm not going to make any friends." ... I said, "Give me a week." I said, "I promise. Just give me a week." He said, "Deal." A week later, he said, "I'm not leaving." He stayed and he's staying again next year.

Common Space

Related to housing style, the availability of common space emerged as a theme among interview participants. Seven of the 16 participants remarked that the

physical space for use by all students was beneficial to creating opportunities for interaction. Those LLPs equipped with an open and accessible area that students could access for academic or social opportunities were at an advantage because they have greater opportunity for spontaneous activity. A1 volunteered that the lack of common space was one of the biggest barriers to interaction in the LLP she oversaw, where common space was converted to additional bedrooms. In addition, the only remaining common space was a basement space that the residents found aesthetically unpleasing. The removal and lack of common space inhibited spontaneous interaction among the students, according to A1. As she noted,

I have students taking first year [subject] next to students who are in advanced level [subject] classes, who are friends who would love to help each other with their work. They're sitting right next to somebody who knows the answers to the questions; there's no space to study.

As A1 highlighted, providing common space for LLP residents is not only necessary for planned programming for students, but is vital for enabling opportunities for spontaneous academic and social interaction.

When common space is incorporated into an LLP setting, students have a venue to connect with each other. As A1 noted, common study space increases the opportunity for mentorship experience between upperclassmen and freshmen. Academic camaraderie was also noted by T3. In commenting on the higher proportion of retained students in academic houses compared to special interest

houses, T3 reflected:

I had a lot of friends who were in [subject] floors their freshman year, getting through [core courses], or whatever it is that the [subject students] must encounter on their first year, was always made better by having your classmates in the same common room as you.

Providing open and accessible areas to LLP students provides opportunities for social interaction in addition to those facilitated by LLP advisors. A5 highlighted that one of the best features of her LLP brownstone was the common room, in which she hosted holiday parties and other events. In addition, the students frequently use it for informal purposes. As she noted:

I also feel like this house is a little different, because we have so much common space. It's almost never empty. There's always people here. There was actually an issue where the people across the hall were like, "I love you all, but I need to sleep. Shut up." Until it's them obviously being the ones in here.

Interview participants shared several similar examples of events and interactions that took place in their LLP common areas as a means of highlighting the strong social interaction among their residents. While poor physical layout of an LLP can be overcome through targeted intervention, providing open space that maximizes the possibility of interaction is ideal. As with having the right mix of students, the right space can create meaningful opportunities for integration among students.

Theme 5: Choosing LLP Housing (Emergent Theme)

As previously noted, freshmen indicate their interest in a particular dormitory or LLP through the Housing Interest Survey, submitted in the summer prior to matriculation. While space is reserved for LLPs to house their applicants, if there are still beds available after the LLP selection process, freshmen or other students without housing assignments may be placed there without indicating interest in participation. While the presence of students who did not choose an LLP for housing was a planned topic of discussion, it is considered an emergent theme because the majority of interview participants initiated this topic for discussion prior to receiving any data cues. In total, 13 of the 16 participants discussed the placement of non-applicants into their LLPs. Of these, 11 from either academic or special interest LLPs, initiated the conversation prior to being questioned. Conversations within this theme centered on identification of placed students as an issue, the effect of the mixed population on social and academic interaction, and the effect of the LLP experience on the placed student.

Assignment of Non-Applicants

The assignment of non-applicants to LLPs was the most frequently mentioned topic among the 16 interview participants. A4 described that issue as it pertains his role as an RA, when he stated:

As a specialty RA, then my basic difference is from other fellow RAs, is the fact that because the house has its own purpose and meaning in terms of specialty community, I have to build a

community that is not of just people being together connected by the same house, but people being together connected by the specific theme of the house, which would be [the academic program], in my case. The problem arises when not all students are [in the academic program], so then my role becomes in the middle because I have to accommodate for those who are not [in the academic program], because for whatever reason they've been placed there, they are there, and to not ignore them as not being there.

While each LLP has a published mission and requirements for residence, interview participants note that it is difficult to implement programming specific to the LLP's mission when not all residents meet those requirements. As T1 noted, the focus shifts from the LLP's goals to trying to create interest among all residents in the LLP community. She stated:

We had to struggle with trying to convince students who had never applied to live there but are suddenly being asked to participate in programs that they didn't know anything about, didn't care anything about and maybe had no interest in. As freshmen some of them were interested and willing because they were new but once they got settled and into the swing of things their interest wasn't necessarily there.

Other participants appeared unfazed by the mix of students in their LLP. Having a mix of students from a variety of backgrounds provided diversity similar to that found in traditional housing. For example, A7, in describing his responsibilities as a resident assistant, noted:

My floor is actually unique because...Our [LLP] floor is not completely all [academic area] students. We have almost half and half. That's because I think it was not possible to fill up all [of the LLP]. We have half and half...We have 2 RAs. Both of us were [in the academic program] but we had 9 [academic program] students. It was fun I thought.

Placement of non-participants into LLPs was generally ascribed by interview participants as the need for the university, which is predominantly residential, to utilize all available housing. It was noted by participants, however, that a disconnect exists between the LLP selection process for upperclassmen, which is managed by the University's Office of Residence Life, and the housing selection process, which is managed by the Housing Office. Though the two offices work closely together to coordinate student services, these processes in particular were noted as a potential source of confusion in selecting and retaining LLP participants. A1 noted an issue of timing, where housing selection occurs before students may have selected an academic program, making it less likely that they will have an opportunity to participate if all rooms are assigned.

T3 reflected on this process issue as she experienced it in cultivating interest in her LLP, noting that the earlier deadline for LLP participation is often overlooked by students, who don't need to apply for housing until later in the semester:

The specialty applications I do sometimes are in early February, housing isn't until late March, housing selection. Students aren't even thinking about where they're going to live next year when I'm like, "You have to fill out this thing if you want to be in the specialty."

Advisors noted that active recruitment and management of the LLP application process helps alleviate the issue. A3 reflected on the efforts she has made to increase active participation in her LLP, which have been successful but not still without issue:

The numbers of people who are not in [the academic subject] are getting smaller, and smaller, and smaller. I did just deny somebody to go into... [academic LLP] floor, that was coming back from being abroad, and had never taken a[n academic subject] class. We are trying to really save the spots for [academic subject students], but the way the housing works, they kind of...At the last minute they put in, often international students, that might not necessarily have any other place to go

As A3 noted, many international students who have more admissions barriers to fulfill, such as English proficiency and financial requirements, may be placed into available housing later in the process than domestic students. As noted in the quantitative portion of this study, international students are overrepresented among students placed in LLPs, in comparison to the overall proportion of international students in the entering classes. This can result in barriers for LLP advisors and other participants in addition to lack of program interest, including language and cultural differences.

Effect on Social Interaction

Six of the 13 participants who noted the issue of placed students in LLP housing commented on the effect of this process on the social interaction among their LLP students. Student resident assistants commented on the difficulties in connecting with and creating programming for the two groups of students under their LLP umbrella. T3 noted that for students who did not apply to her LLP, she does not have an immediate basis of connection with them. As she noted:

It is a little bit rougher because I don't really know of those other students that didn't ask to be in the community. I don't really know what to talk to

them about when I first meet them. I've got to flush out, what are they interested in?

While trouble in finding programming that appealed to all residents was an issue, A7 noted that the process could also be beneficial in creating more diverse and appealing programming. As he noted:

The issue about our floor ... is that because we were divided, I couldn't have an event that was just for [subject majors] because then the people that were not in [that major] would feel left out. My core and I had to somehow integrate [the academic subject] into a more broad events. I think that was better because [academic major] students while they like [the academic topic] and we like to attend events that are [topic]-related, we're always constantly doing [academic subject] stuff that sometimes it's just better to not do [the subject].

As mentioned previously, the larger proportion of international students among those placed in LLP housing created additional issues for LLP participants. One particular concern was providing a diverse experience for all of the students in the LLP. As T1 noted:

I think the whole communication effort was more challenging and I was disturbed that by having so many they were also rooming with each other so they did not have a very diverse or very western-like college experience in my opinion in terms of their residence.

A5 noted a similar experience for international students in her LLP. While these students created a very strong social connection with each other, it occurred apart from the LLP community. She noted:

What we ended up having this academic year, there was a cohort of students that stayed up here all the time. Then there was a group of students, an international group of students...who were off in the same area and there were 10 of them, by chance, all in the house. They were all clustered downstairs all the time. It was weird, because it was two different communities. The one in here is the one that went to all my events and did everything, like hung out with me like it was the best thing ever. Then the ones downstairs were very much still kept to themselves...none of them were [in the academic program] I don't think, but they had their own community...

Conversely, other interview participants highlighted that international students had an easier time integrating into a community that they had not chosen to participate in, when compared to domestic students. A4, in reflecting on his own experience as an international freshman placed in a special interest LLP, noted:

I didn't know about specialty housing at all. I didn't know about US system of housing, and how it works. I just knew that I am going to be placed in dormitory. I was very excited just because of its very new experience and you get much more freedom than at home.

T1 also noted that, in her experience, the cultural background that many international students bring with them allows them to better respond to placement in LLP than domestic students. She noted:

I think the internationals as freshmen assimilate better than the domestics who are used to being more entitled, to say what they want and they don't want. Where I think some internationals don't want to offend, want to show respect, don't want to start out their experience complaining. ... I think that they have a better experience than the domestics who get placed there.

Effect on Academic Interaction

Participants from academic LLPs also noted that placed students without an academic background matching the LLP requirements can affect the level of academic interaction among LLP participants. While programming for both academic and non-academic LLP participants can provide broader social experiences, it can also weaken the academic theme of the program. A1 described the issue with mixing participants and non-participants in her community:

Unfortunately, there's a dilution factor. Unfortunately, the cool factor ... in order to make it cool to be involved in academics, I think you have to probably have to something like at least 75 percent of the people who are actually into it. If it's 50-50, the 50 who are like, "Whatever." You know? I mean the ones who are like, "Come give me a break," are always going to win out over the 50 who want to [participate in academically focused events]. You always have to be in the majority.

As A1 noted, and reflecting previous comments about shared attitudes among LLP students, having a majority of participants who have chosen to participate in the LLP can be enough to create the necessary level of academic interaction among participants. In addition, A3 noted that being in the minority of non-participants in an LLP populated by students who chose to participate can promote interaction. In describing students who had not chosen to participate in her LLP, A3 noted:

They generally try to "keep up" with the [participant] group. I have one girl who's not applied to live at [the LLP], but got put on the

floor, and therefore registered for the class, and is not a[n academic] major at all, but chose to stay in the class because she felt like she'd be missing out socially if she didn't.

In general, the ideal LLP composition would consist entirely of self-selected students with shared interests and motivation. While having a large number of non-applicants placed into an LLP can inhibit programming and interaction, there are also opportunities and benefits available to students who are placed as well as applicant LLP participants.

CHAPTER 5

ANALYSIS AND RECOMMENDATIONS

Student success has been a central theme of academic research for decades. While students weigh the value of higher education against its costs, administrators seek to understand how the undergraduate educational experience can be improved. LLPs represent a potential approach that can be used by institutions to enhance a student's ability to succeed in his or her educational goals. These programs are a tool with which administrators can potentially enhance student commitment through heightened peer, faculty, and academic interaction, which have been identified as key supporters of student academic success (Tinto, 1975; Astin, 1993).

LLPs vary considerably in focus, format, oversight, and participation by students and faculty, making assessment of the type of LLP that might be the best fit for an institution difficult. The need for more research on the diversity of LLPs has been highlighted (Inkelas and Soldner, 2011). Early LLP studies focused on comparison of participants versus non-participants (Pike, 1993; Pike Schroeder and Berry, 1997, Pasque and Murphy, 2005), though more recent studies have explored different formats and focuses of these programs (Inkelas and Wiseman, 2003; Stassen, 2003; Inkelas *et al.*, 2008). Examining differences between LLP

participants by program type is complicated by the need for sufficient numbers of students to draw significant comparisons. Using BU's large undergraduate population and diversity of LLPs, this study sought to expand current knowledge by exploring how student success may be related to LLP participation. In addition, housing practices at BU provided a unique opportunity to better understand the experience of students who were placed rather than opted in to an LLP. Finally, examining the LLPs at BU provided an opportunity to expand the body of LLP research to private institutions. Notable research to date has focused on single public institutions (Pike, Schroeder and Berry, 1997; Pike 1999; Inkelas and Weisman, 2003; Pasque and Murphy, 2005; Stassen, 2003), or is related to the largest coordinated multi-institution study to date, the NSLLP, which involved the participation of 40 public institutions and 9 privates (Inkelas, 2008). Research stemming from this study is therefore, by limitation of the programs that participated in the NSLLP, is heavily weighted toward public institutions (Inkelas, *et al.*, 2006; Inkelas *et al.*, 2008; Szelenyi and Inkelas, 2011).

In addition to growing current research on the interaction between LLPs and student success, results of this study can help inform administrators seeking to design or reinvigorate student intervention programs by providing more information on the association of LLP practices and first year student success. Included in this chapter is a brief summary and discussion of key results, an overview of how the results of this study impact current research in the field, a

review of the limitations of this study, and the identification of areas of importance for practitioners and for future research.

LLPs and Student Success

The purpose of this study was to understand the relationship between LLP participation and student success among BU entering freshmen. Though public institutions have noted differences in mission and student composition from private ones, such as BU, commonalities of size and diversity make LLPs a useful intervention for both environments. Results from this study reflect previously conducted research at public institutions, reinforcing the current literature regarding the role of LLPs in student success. For BU entering students who participated in LLPs, regardless of type of LLP or choice to participate, results indicate that these programs are positively related to first year success of undergraduate participants, when compared to students in traditional housing. In total, the information provided in this dissertation aligns with Astin's I-E-O model (1993). LLP participants enter with significantly stronger academic preparation, in the form of higher HS GPA and SAT scores. LLP faculty, staff and student advisors indicated that LLPs can be beneficial in creating a more accessible environment for social and academic interaction among first year students within the larger BU community. Finally, LLP students achieve a significantly higher first year GPA, and continue to the second year in larger

proportions than students in traditional housing. Both measures are successful outputs of the first year in college. In total, these results provide support to previous research demonstrating a relationship between LLPs and academic success, extending these findings to the private institution setting.

While many positive associations were uncovered in this research, not all findings indicate that LLPs interact with a student's academic and social integration. Previous research has indicated a relationship between LLP participation and measures of student integration and commitment, when controlling for entering characteristics (Stassen, 2003), as well as highlighting the role of LLPs in the student retention decision (Pike *et al.*, 1997). Though honors LLP participants showed a statistically significant higher average response than participants in academic LLPs and traditional housing to questions of perception of interaction with faculty and students, LLP participation was not a significant predictor of a student's perceptions of the quality of interaction with faculty or fellow students. These types of interactions represent two of the core institutional experiences in Tinto's model of student departure supporting student integration and commitment (Tinto, 1993). This is not to say that LLP participation does not enable social and academic integration, but that these results indicate that LLP participants do not perceive their experiences with faculty peers to be more positive than those of students in traditional housing, when controlling for all other variables in the analysis. Though honors LLP students had significantly higher mean responses, this group was also shown to

be significantly less diverse in terms of race/ethnicity and academic preparation. These pre-college demographic inputs have been linked to social and academic integration, respectively (Pascarella, 1985; Kuh and Hu, 2001). Therefore, not all LLP types are equally effective in enhancing a student's ability to succeed when controlling for pre-college characteristics, financial resources, and first year academic experiences.

Comments from interview participants provided additional insight, indicating that the BU housing practice of grouping freshmen together into well-resourced, traditional dormitories creates an advantageous environment for social interaction and extracurricular activities, which forms the basis for social integration. In addition, motivated students in the traditional housing environment are provided with opportunities for faculty interaction outside of the classroom through the residential college format, if they chose to pursue that option, creating opportunities for academic integration. Thus, for LLPs to be more effective than traditional housing, attention must be paid to creating an environment that enhances the first year experience of participants beyond the existing threshold created in traditional housing. While the research in this dissertation indicates a positive association between LLP participation and student success, this finding is qualified by several factors, including type of LLP, choice of participation, and the academic content of the program.

Type of LLP

The research presented in this dissertation demonstrates that not all LLPs are equal in their ability to attract, retain, and support first year students. Results concerning BU LLP participants indicated similarities with the current literature on LLPs, but these results are an aggregation of three very different program types with different student profiles. In comparing program types, it becomes clear that they are not equal in influencing success in entering BU students.

When examining research results by type of LLP, distinctive student profiles emerge of the BU LLP participants, shaped by both the students who choose to participate as well as BU housing policies that place students into LLPs. Honors students are more likely to be White and female, with stronger academic preparation. These students tended to have better access to financial resources, resulting in a smaller proportion of the group with unmet need, and are more likely to have merit aid. Honors LLP students are also most likely to stay at BU beyond freshman year, and achieve a higher first year GPA than other students. Academic LLP students have a greater probability of being male than other housing types, and are also more likely to come to BU with stronger academic preparation. These students are more likely to have unmet need and to receive need based aid than students in honors LLPs or in traditional housing. Like honors LLP students, academic LLP students are also more likely to be retained, and have a higher first year GPA than students in traditional housing. Students

in special interest LLPs have a higher probability of being female as well as international. These students are also the most likely not to have chosen participation in their LLP. Of the three LLP types, special interest LLP students are closest in similarity to students in traditional housing in terms of retention and first year GPA.

Honors LLP participants exhibited many strengths in comparison to other LLP participants and to students in traditional housing. Despite these significant advantages, honors LLP students are no more likely to be retained than students in traditional housing, when controlling for pre-college and first year performance variables. In addition, results indicated that Combined – SAT score was negatively related to a student's retention to the second year, when controlling for pre-college characteristics and first year performance. These findings contradict previous research, which provided support for a significant relationship of honors LLP participation and retention (Astin, 1984, Inkelas, 2008).

Contrasted with the lack of a significant relationship with retention is the result that honors LLP participants are more likely than students in traditional housing to find their overall experience at the institution to be excellent, when controlling for all other variables. Honors LLP faculty, staff and RAs provided additional support for this finding, highlighting a strong sense of camaraderie among their LLP participants within a well-resourced environment complete with specialized programming, academic advisors, and increased opportunity for informal faculty

contact. In Tinto's model, academic and social experiences feed a student's institutional commitment, and subsequently, the decision to continue at the institution. However, while honors LLPs have created a superior environment for student learning, the findings of this study indicate that these students are as likely to depart as students in traditional housing. A factor that was not operationalized or controlled for in this research is the student's intention to transfer, potentially to a first-choice institution. Within Tinto's model, if a student believes his or her personal educational goals would be better served elsewhere, the institution's environment may not be enough to influence the student to stay.

In predicting first-year GPA, participation in academic and honors LLPs were both significantly related, producing respective increases in GPA of .11 and .04 points, on average, above students in traditional housing when controlling for pre-college and financial resource variable. Practically speaking, these differences in first year GPA, though minimal, can potentially affect a student's academic experience. Minimum GPA requirements are commonly applied to scholarship maintenance, study abroad and research opportunity participation, as well as having implications for a student's ability to be competitive for job or graduate school placement. Therefore, these results indicate that honors and academic LLPs have the potential to provide a competitive advantage to participants, over participants in special interest LLPs and traditional housing.

Research by Inkelas *et al.* (2008) reduced LLPs into three general categories based on area of control in the institution (academic versus administrative) and level of resources. The investigators noted that there were no significant differences in learning outcomes between “Small, Limited Resourced, Primarily Residence Life Emphasis” LLPs, in which the academic and special interest LLPs would be categorized, and the “Large, Comprehensively Resourced, Student Affairs/Academic Affairs Collaboration” LLPs, in which the honors LLP would be classified. Results of this dissertation corroborate these findings, in that both academic and honors LLP were related to increased first year GPA among participants. In addition, only academic LLPs were associated with retention of students to the second year, when controlling for pre-college characteristics and financial resource variable. Therefore, while these programs may not receive the same support as honors LLPs, they are providing an environment that is influencing a student’s decision to remain at the institution.

Choice of Participation

LLPs attract a more academically prepared student, providing an advantage to institutions in terms of an enhanced entering freshman profile. Of the LLP participants who chose to join, both including and excluding honors LLPs, students had significantly higher average SAT scores by 20-46 points and average high school GPAs by .03 to .07 points, in comparison to non-participants. These students continued to excel in their first year, with GPAs that

were, on average .04 to .08 points higher than that of students who were placed into LLPs and students in traditional housing, when holding pre-college characteristics, housing type, and other measures of first year performance constant. These results provide additional confirmation to similar findings in the NSLLP (Inkelas, 2008). These results suggest that students who opt to participate in LLPs have motivations or other untested characteristics that support their academic success. Viewed within Astin's conceptual framework, when a student's pre-entry attributes are held constant, students who choose LLP participation may also bring additional motivation that supports academic success, creating better opportunities for positive outcomes.

Current literature indicates that LLP participants report easier academic and social transitions, on average, than non-participants (Inkelas, 2008). This concept is supported by comments from the interview participants who noted that the largest benefit of LLPs is in creating feelings of community among students, which can be difficult at a large university. However, creating communities was challenged by the practice of placing students who did not chose to participate into LLPs. Placement of students was the most frequent emergent theme among advisors in academic and themed interest LLPs. In particular, this practice seemed to affect the advisor's ability to generate interest in events structured around the core theme of the LLP, which had ramifications on on-going student interest, faculty participation, RA motivation and ability to create programming. These comments reinforce findings that show academic and themed interest

housing participants are statistically similar to traditional housing participants in terms of their perceptions of quality of interactions with their peers at BU. By broadening the focus of programming away from the LLP focus to accommodate for non-participants, RAs were no longer able to differentiate the LLP experience from that provided to students in traditional housing. Research has demonstrated that peer interaction is positively related to measures of institutional and social support (Milem and Berger, 1997, Berger and Milem, 1999). While strong leadership from student RAs often served as a motivator for social interaction within academic and themed interest LLPs, the lack of adherence to a common focus of interaction weakens the overall goals of the LLP. Interview participants' comments suggest that strong RAs have found ways to work around the placement of non-participants with creative, socially-based programming, but it makes their job more difficult.

Research on the effect of mixing assigned and self-selected students in an LLP is scarce, though Frazier and Eighmy (2012) noted decreased satisfaction in LLPs where students were placed in, in comparison to those where all students chose to participate. The results of this dissertation, however, indicated that there was no difference in the perception of quality of interaction with faculty or students, or evaluation of overall experience, between students who opted in and those were placed in to LLPs or who were in traditional housing, when controlling for all other variables. While self-selection to participate in the NSSE may influence these results, this outcome suggests that being placed into an LLP

does not necessarily detract from the student experience. Interview participants suggested several ways in which students who were placed into an LLP interacted with other LLP participants. In LLPs where placed students were few, these students tried to assimilate with the larger group. In LLPs with several placed students, RAs provided less LLP-focused programming to appeal to all students, placed students formed de facto cohorts within the community, or they simply did not participate. From an administrative point of view, these comments indicate that the practice of placing students in larger numbers into LLPs makes it difficult to provide the promised experience to students who have requested to participate.

Academic Content

The results of this dissertation indicate that honors and academic LLPs are related to measures of student success. Specifically, honors LLP participants had higher GPAs, on average, and were more likely to find their overall experience at the institution to be excellent, when controlling for all other variables. Academic LLP participation was also related to first year GPA as well as retention, when compared to participants in traditional housing. However, these analyses indicated that special interest LLPs were statistically similar to participation in traditional housing.

One commonality shared by honors and academic LLPs is the academic foundation of the programs. These LLP formats are rooted in the integration of

academic content. This practice also provides a natural bridge to creating LLPs based on available institutional resources and known areas of student interest. Honors and academic LLPs attract students based on their academic goals. Tinto (1975) postulated that commitment toward the educational goal of degree completion was a key driver in his model of student departure. This type of commitment is brought with the student to the institution, and constantly informed through educational and social experiences. Students who opt to participate in honors and academic LLPs have indicated commitment to their major and education by choosing to immerse themselves in their educational experiences outside of the classroom. This shared educational motivation among participants contributes to the differences in efficacy of these programs.

A disconnect in these research findings exists when considering the quality of interaction with faculty, which was also found to be related to increased first year GPA. On average, NSSE participants had a .43-point increase in the satisfaction scale with each point increase in GPA, when controlling for all other factors. However, honors and academic LLPs, in comparison with traditional housing participation, were not found to be significant predictors of quality of interaction with faculty, when controlling for all other variables.

Comments from interview participants suggest a range of experiences, both supporting and contradicting this finding. Honors LLP faculty, staff and RAs all highlighted additional access to program faculty by students as a program

hallmark. Interview participants from academic LLPs highlighted a range of faculty participation, from co-registration in a dedicated course, to attendance at multiple events per semester, to programs that were driven solely by the student RA. For honors and academic LLPs containing a dedicated course, interview participants noted higher levels of participation and fewer students placed in their LLPs.

There are two potential drivers of the inherent disconnect between the quantitative results and information provided by LLP advisors. First, perception is formed in large part by expectation. As Kuh (2003) noted, “Most students come to college expecting to be more engaged than they are. What first year students say they *expect* to do in college typically exceeds in almost every category of performance what they *actually* do.” Understanding students’ pre-college expectations of LLP participation, particularly with honors LLP students, may help inform how these programs actually affect students. Second, inconsistency in type and amount of faculty interaction across LLPs, reflected in the comments of interview participants, makes the overall perception of students difficult to ascertain. Though this research highlighted differences in student participants and outcomes between LLPs categorized by focus, the typology utilized in this study was insufficient to provide conclusive quantitative support of how the amount of faculty participation might affect the overall LLP experience. Though qualitative results highlight a relationship exists, additional research would be required to examine this question further.

LLP and the Conceptual Models

Astin and Tinto created models of academic achievement and retention that help illustrate the key contributors to student success. Researchers have worked to validate these models over the last forty years, providing enhancements to account for the changing student population in postsecondary education.

Administrators use these constructs to support the creation of programs such as LLPs to enhance the student experience. This study provided analytical support for many of the drivers of student success that have been central in academic research. Race/ethnicity, merit and need-based grant aid, first year academic performance, and a student's evaluation of his or her overall experience were all shown to be significant predictors of student retention and first year GPA.

Astin and Oseugura (2005) noted significant ties between the selectivity of the institution and four-year degree completion, signifying that pre-college preparation was important to a student's ability to succeed academically. Pre-college indicators, LLP participation and financial resources explained 20% of the variation in first year GPA of the students in this analysis, similar to ranges with R^2 values of .22 to .27 found by Stassen (2003) using comparable inputs.

Adding undeclared status and credits attempted versus earned to the model for first year GPA more than doubled the R^2 to 0.45, accounting for 25% of the variability in first year GPA among entering BU students, when controlling for all other variables. These results reinforce that background characteristics and

financial resources are important to academic success, accounting for nearly half of the predicted variability. Using Astin's I-E-O framework, this model indicates that student inputs and experiences are nearly equally important in explaining the variation in first year GPA.

While first year experiences are shown to be significant drivers of first year GPA, participation in LLPs, specifically honors or academic LLPs, were only a minor direct contributor, explaining 2-3% of the overall variation in this model. These results are consistent with current literature, which has shown LLP participation to be a weaker predictor of academic success than other student inputs (Stassen, 2003; Pasque and Murphy, 2005). Therefore, while LLP participation can positively impact a student's academic performance, it is a significant but small part of the equation.

Pre-college characteristics and first year experiences played a different role in predicting a student's decision to continue to the second year. Using a pseudo- R^2 coefficient to compare the relative predictive values of the regression models of retention, inclusion of demographics, background variables and LLP participation had little to do with the retention decision, accounting for just 1.3% of the variation in the student departure decision, which was consistent with other research (Ting and Robertson, 1998). First year academic performance variables and first year perception indicators contributed an additional 6% and 7%, respectively, to the explained variability in student retention, for a maximum

R² of .16 among NSSE participants, when controlling for all other variables. In relation to Tinto's model for student departure, these results suggest that while pre-college characteristics influence the student retention decision, their effect is outweighed by institutional experiences in the first year, where performance and student perceptions are equally significant in relation to student retention.

However, the combined effect of these inputs is comparatively weak. Using different combinations of background and first year variables as well as analytical methodologies, researchers have produced models explaining between 13% and 29% of the variability in the student retention decision (Terenzini and Pascarella, 1978; Chapman and Pascarella; 1983; Pascarella, 1985).

As with first year GPA, a small percentage of the student's retention decision was explained by the inputs presented in this study, with LLP participation providing a significant but minimal amount of explained variability in the model. Pike *et al.* (1997), used two-group path analysis on first year undergraduates, and found that LLP participation did not directly interact with retention when other key variables were controlled for, such as student demographics and measures of first year integration and commitment. Pike (1999) noted that LLPs did have direct or indirect effects on measures of involvement, interaction with students and faculty, and student learning. While the quality of interaction with both faculty and students were significant in predicting first year GPA in this study, LLP participation was not a significant predictor of either of these measures. Overall, while this study did not confirm prior literature on the influence of LLPs

on student retention, it does reinforce the idea that a complex series of influences and outcomes shape a student's decision to leave an institution. Quantitative research was instrumental in providing context to the quantitative information, as well as highlighting where available data may not be capturing the entire picture of student success. Feedback from faculty and student advisors draw attention to the importance of LLPs to the students who seek them out, as well as highlight the presence of other potential variables and motivations among LLP participants that may contribute to student success.

Limitations

Though the research detailed in this study provides clarification of the relationship of LLPs with student success in the first year, limitations exist in the survey design and analysis which merit caution in the generalization of these results. Institutional Research offices are sources and drivers of postsecondary research and information, providing single institution studies based on access to student data. As with many studies of retention and academic success, this research had the same access restrictions, looking at four cohorts of entering first year students at a single private institution using existing data sources. Limitation in scope may produce a lack of generalizability in research results across institution types or to stages of undergraduate education beyond the first year.

In addition, student perception data were pulled from an existing source, the NSSE. Perception questions may provide less than ideal operationalization of the concepts of academic and social integration because this survey was developed for reasons other than the purpose of this study. Student participation in LLCs, as well as in the NSSE survey, is self-selected, providing the potential for bias. Self-selection introduces the possibility of additional motivational variables interacting with student success that were not explored in this research.

Implications and Recommendations for Professional Practice

Results of this research, which provide insights to BU's administration on the efficacy of BU's LLPs, are also of practical use to academic and student affairs administrators whose focus is toward implementing policies and programs that enhance the institutional experience for students. Results of these analyses, and information collected from interview participants provides support for several practical recommendations for BU administrators, as well as administrators to consider when developing and implementing LLPs on their campus.

- LLPs attract academically prepared students. This research demonstrates that students in honors and academic LLPs come to the institution with statistically significant higher mean SAT scores and high school GPAs than students in traditional housing. While the overall goal of LLPs may

be to enhance student experience, the potential benefits of these programs in attracting students with stronger academic preparation and motivation represent a potential means for supporting the institutions recruitment initiatives.

- Academic LLPs are effective. As Inkelas *et al.* (2008) noted, larger, more heavily resources LLPs don't necessarily confer additional benefits to students when compared to small programs managed through student affairs. Consistent with these findings, this research presented in this dissertation indicated that academic LLP participation was a predictor of retention when controlling for entering student characteristics, whereas honors LLP participation was not. These programs have the added benefit of capitalizing on existing academic infrastructure to create smaller communities among more popular programs, providing a starting point for administrators looking to develop LLPs at their institution.
- Academic involvement creates opportunity. Building on the previous recommendation, integrating academic components provide an opportunity to utilize current resources to create smaller communities of student. Interview participants in honors and academic LLPs containing a dedicated course for participants noted higher levels of participation and lower placement of students. In addition, required coursework may act as a deterrent to participants more interested in location of the LLP than in the LLP itself.

- Focus on freshmen (or upperclassmen). Social integration among freshmen, or of any student, requires the presence of other students as interested in making these types of connections. Freshmen, by nature of their inexperience in the college environment, are typically in greater need of social interaction whereas upperclassmen often return to familiar social bonds. As interview participants noted, the proportion of freshmen to upperclassmen is an important factor in facilitating social interaction of first year students, because the social needs of these two groups of students are very different. By pairing freshman floor-based and upperclass house-based LLPs, BU is able to provide environment tailored to the needs of each of these populations while creating opportunities for interaction between the groups.
- Adhere to LLP goals. While results of this study indicate that placement of students in housing is not detrimental to the placed student in terms of first year performance, the process does not contribute to the intended purpose of the LLP. Interview participants noted that insufficient subscription to LLPs by students is due to lack of interest in the LLP, limited or inadequate marketing of the opportunity among potential applicants, and/or confusion during the LLP and housing application processes. Review of programs that do not attain enough enrollment to meet their available capacity is necessary to explore whether housing policies or level of interest in the program is the source of the issue is

necessary to resource LLPs that have the most potential to attract and retain students.

- Reward faculty involvement. Faculty interviewed in this study noted that while interest in working with LLPs exists, constraints on faculty time and resources can often limit their availability for participation. Incentivizing faculty involvement may help increase the amount of interaction.

Teaching an integrated LLP course may act as incentive, helping to meet the faculty member's teaching requirements for the semester. However, Haynes and Janosik (2012) noted that incentives don't necessarily need to be in the form of stipends or teaching load reduction. Other incentives to ease faculty participation barriers have been employed, including parking passes, meal plans, and reimbursement for student-oriented activities.

- Provide common space for interaction. Reflecting the comments of interview participants, facilities matter in creating interaction among students. While building formats that offer greater isolation may be attractive to upperclassmen looking for more independence, this can also make social interaction more difficult for incoming freshmen. In addition, the presence of common space was highlighted as a necessity among LLP administrators in creating a cohesive environment, supporting spontaneous social and academic interaction among peers.

Recommendations for Future Research

LLPs continue to be an area primed for research. Due to the variety in formats, support mechanisms, and student participants, drawing conclusions across programs and institutions remains difficult without more study. Building from the findings presented in this dissertation, there are several areas where additional research would be beneficial to clarifying the role of LLPs in student success.

- Additional research would be beneficial in clarifying the role of honors LLPs in student success. Results of this dissertation indicated that while this program was significantly related to first year GPA and a student's positive evaluation of their overall experience, it was not a factor in student retention to the second year, or their perceptions of the quality of interaction with faculty and peers, when controlling for pre-college characteristics and first year variables. Additional research on how pre-college expectations and LLP participation compares to traditional housing participation by high performing freshmen would help clarify some of these questions.
- While classification of LLPs by academic content highlighted distinctions in efficacy in shaping student success, these categories were not distinct enough to investigate potential drivers of differences within each group. Variety in the locus of control, presence of integrated coursework, and level of faculty involvement have been noted in research (Soldner and

Szelenyi, 2008). Combined with different focuses on academics or special interests, comparing these programs across institutions becomes extremely difficult. To that end, additional research is recommended to continue to understand the different formats and effectiveness of LLPs, along with expanding the pool of relevant and generalizable research, in relation to student success at institutions of different sizes, missions, and institutional control.

- Specific studies are recommended to better understand the interaction of LLP format features with student success. These include analysis based on the proportion of students placed in an LLP, use of LLP-specific for-credit course requirements, proportion of freshmen to upperclassmen participants, and measurement of faculty involvement. Both quantitative and qualitative research with the student participants would be effective in providing more information on these aspects of LLP programs.
- While upperclassmen were out of scope in this study, additional research on the performance of LLP participants beyond the first year is recommended. This includes the effect of academic LLP participation on success in the major; the relationship between first year LLP participation and upper-class academic success and degree completion, and the effect of multi-year LLP participation on student success.
- Though diversity among entering students was not a focus of this research, findings that student diversity differed among the types of LLPs

was an unexpected finding. Additional research is recommended to understand how different housing types affect diversity initiatives at institutions, and if the use of LLPs can support a more diverse environment.

Conclusion

The purpose of this study was to explore how participation in LLPs was related to the success and perceptions of four entering freshmen cohorts at Boston University. In addition to examining LLP participation as a whole, LLPs were segmented by level of academic focus, including honors, academic and special interest LLPs. Results indicate that LLP participation is positively related to retention, academic success and a student's evaluation of the overall environment of the University. However, not all types of LLPs are equally effective in supporting first year academic success, with LLP formats and housing policies affecting the LLPs overall ability to create academic and social integration, and increased institutional commitment among participants.

Academic LLP participation was linked to increased retention and first year cumulative GPA, while honors LLP participants were more inclined to rate their overall experience as excellent, when controlling for other variables in this study.

As students continue to assess the value of higher education against the financial requirements and time commitments needed to attain a degree, administrators and researchers must to continue to explore ways to promote

student success and degree completion. The research presented in this study contributes to the greater picture of how one such intervention, the living learning program, can provide academic and social support to entering freshmen. In addition, this study also raises new areas to continue research on this subject. It is through continued examination of how the wide variety of these programs serves to support student success that more effective communities meeting the unique needs of various student populations can be implemented.

APPENDIX

Appendix 1: Astin's "I-E-O" Model (1975)

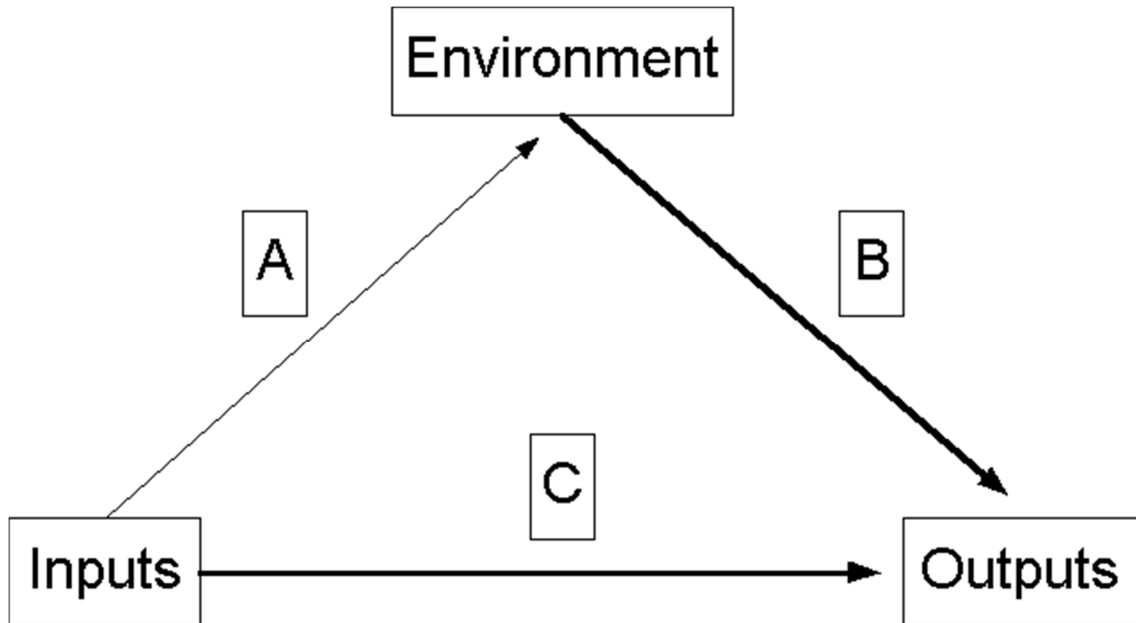
Appendix 2: Tinto's Model of Student Departure (1993)

Appendix 3: Overlap between Astin's and Tinto's Models

Appendix 4: AY 2013-2014 BU Specialty Community Residences and
Requirements

Appendix 5: Qualitative Research Format and Informed Consent

Appendix 6: Correlation Matrix

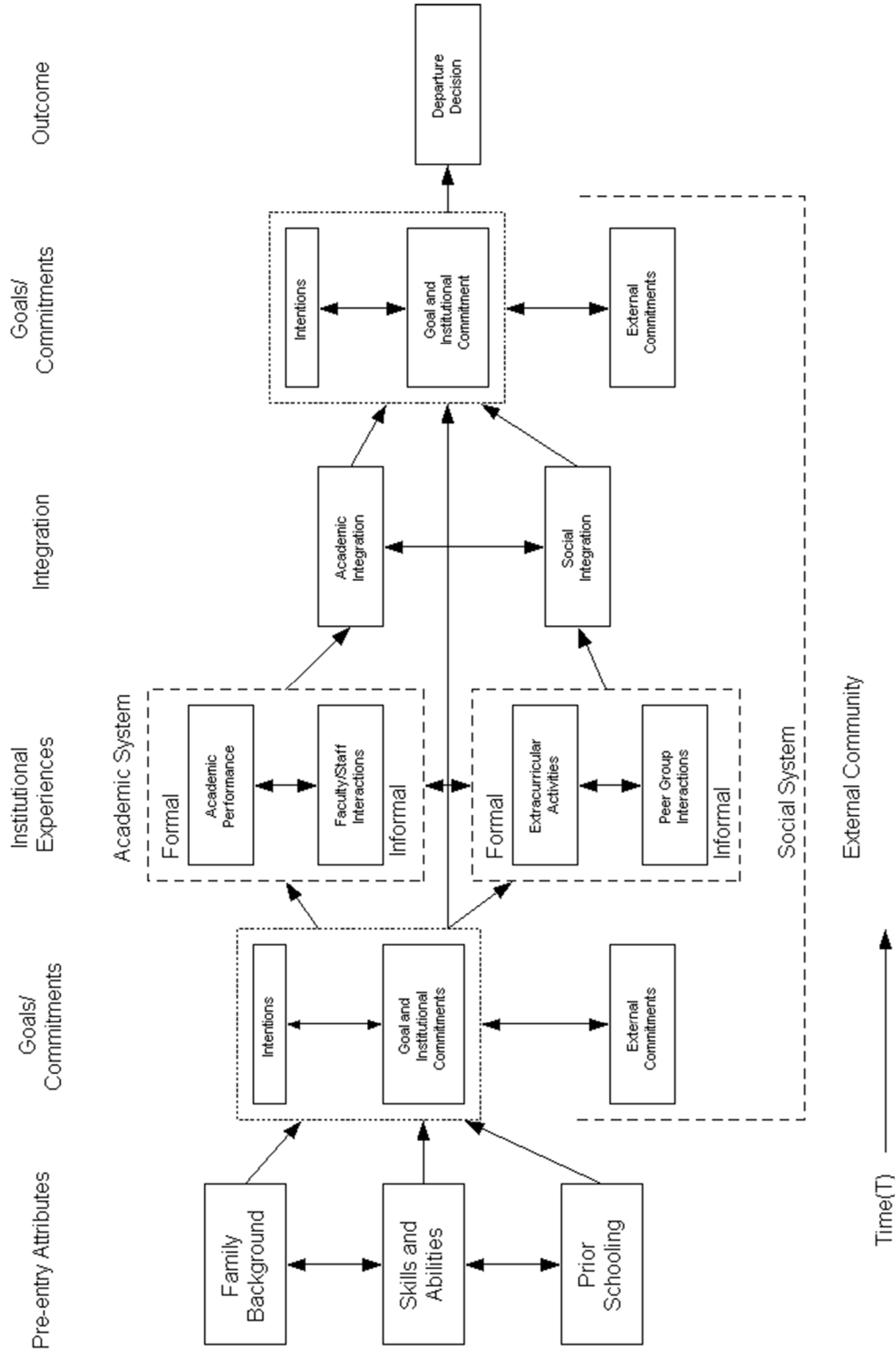
Appendix 1: Astin's "I-E-O" Model (1993)

Inputs (I) - characteristics of the student upon entry. It is important to realize the effects of these inputs on both how the student experiences their environment (A) as well as how they influence development of various outcomes (B).

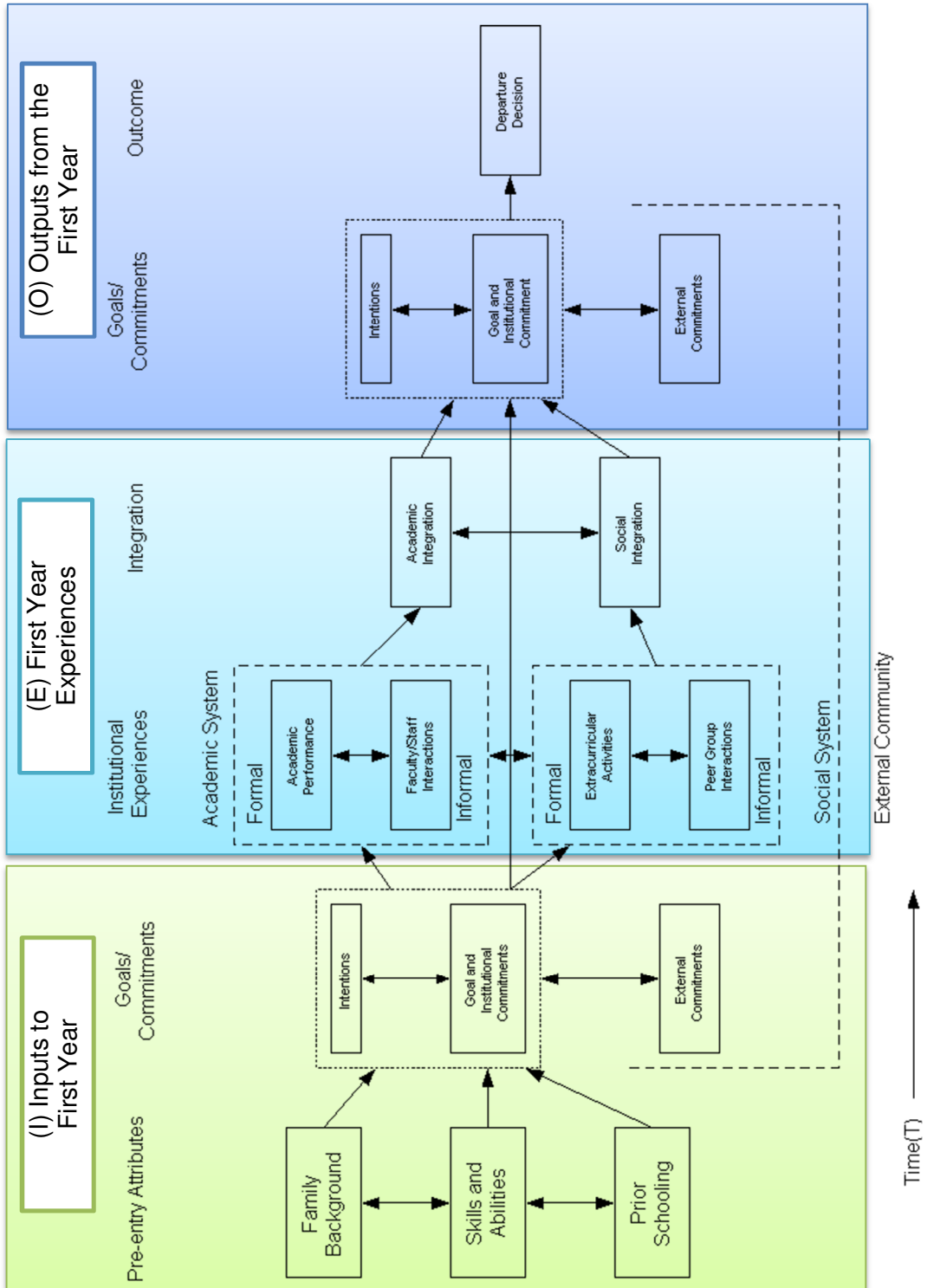
Environment (E) - aspects of the institutions such as programs, faculty, peers, and academics.

Outcomes (O) - the characteristics of the student after exposure to the environment.

Appendix 2: Tinto's Model of Student Departure (1993)



Appendix 3: Overlap between Astin's and Tinto's Models



Appendix 4: AY 2013-2014 BU Specialty Community Residences and Requirements

Format 1: Honors Community

Specialty Community Residences	Requirements
Kilachand Honors College	Enrollment in the Kilachand Honors College.
Trustee Scholars House	Enrollment in the Trustee Scholars Program.

Format 2: Academic Communities

Specialty Community Residences	Requirements
Classics House	A major or minor in classical studies, Greek, Latin, Modern Greek, or archaeology.
College of Communication Floors	Enrollment in the College of Communication.
College of Fine Arts Floors	Enrollment in the College of Fine Arts.
College of General Studies House	Enrollment in the College of General Studies (juniors and seniors who are selected to reside in the House will act as mentors to the underclassmen and will be expected to participate in House activities).
Core Curriculum House and Floors	Enrollment in the College of Arts and Sciences Core Curriculum Program.
Education House	Open to any undergraduate student enrolled in the School of Education
Engineering House	Enrollment in the College of Engineering.
Engineering Floors	Enrollment in the College of Engineering.
Hospitality Administration House	Enrollment in the School of Hospitality Administration.
Language Houses: <u>Chinese House</u> <u>French House (La Maison Française)</u> <u>German House (Deutsches Haus)</u> <u>Italian House (La Casa Italiana)</u> <u>Japanese House</u> <u>Spanish House (La Casa Hispánica)</u>	A major or minor in the appropriate language or demonstrated commitment to learning the language by enrollment in a foreign language course; commitment to speak the language at all times in the common areas of the house.
Management House and Floors	Enrollment in the School of Management.

Format 2: Academic Communities (continued)

Specialty Community Residences	Requirements
Performing Arts House	A major or minor in theater or music; or current enrollment in theater, music, or dance courses; or active participation in University performing arts organizations.
Sargent College House and Floor	Enrollment in Sargent College.
Women in Science and Engineering -Upperclass (WISE-UP)	WISE-UP: Female students (sophomores, juniors, and seniors) who are declared majors in STEM (Science, Technology, Engineering, and Mathematics). Preference given to former WISE@Warren residents. WISE-UP house activities will include special seminars, interaction with STEM female faculty, peer and graduate student mentoring, academic support, STEM career experiences, creativity and innovation, and societal outreach in STEM.
Women in Science and Engineering (WISE) Floor, Freshmen	<u>WISE@Warren</u> : Female students who are entering freshmen and are interested in majoring in a STEM (Science, Technology, Engineering, Mathematics) discipline. Residents must register for a freshman seminar (First Year Experience) that meets twice a month and focuses on career opportunities, discussions with STEM female faculty and non-academic professionals, academic preparation and social and community outreach around STEM topics.

Format 3: Special Interest Communities

Specialty Community Residences	Requirements
Common Ground House and Floor	Martin Luther King Scholar, Howard Thurman Center Ambassador, or demonstrated commitment to the Howard Thurman legacy by attendance at Common Ground Orientation or other programs sponsored by the Howard Thurman Center. Interest in exploring cultural differences and common ground, social activism, and the philosophical foundations of justice.
Community Service House	Involvement in local community service organizations and projects; participation in FYSOP or the Community Service Center strongly preferred.
Earth House,	Strong interest in the environment and environmental issues; participation in sustainability initiatives on campus; involvement in events such as Earth Hour and RecycleMania.
Limited Parietal House	For female students who prefer more restricted visiting hours (no Specialty Residence application required).
Music House	A major or minor in music or the ability to demonstrate an active interest in music.
Wellness House	Interest in a healthy lifestyle; commit via signed house agreement to live in a smoke-free and substance-free environment.
Writers' Corridor	Interest in writing and in sharing your work with others, and in submitting original work for floor publications.

Source: Boston University Housing Office, List of Specialty Communities & Living-Learning Communities, 2013.

Appendix 5: Qualitative Research Question Guide and Informed Consent

Interview Question Guide

- Describe your role with _____? How long have you been in this role?
- What kind of activities you organize for _____?
- How do these activities support the students' academic success?
- What advantages or disadvantages do you feel participation in _____ provides over living in traditional housing?
- [Honors Group] Fall 2013 freshmen in the honors floors and houses had a significantly higher retention rate to their sophomore year than students in traditional housing. What are your thoughts on this?
- [Academic Group] Students in LLPs with an academic connection [list provided] have a higher retention rate than traditionally housed students, or those in LLPs based on a special interest. Do you believe there is a connection?
- [Special Interest Group] Students in LLPs with a special interest connection [list provided] are retained at rate similar to students in traditional housing, as opposed to those students in honors or academically-centered LLPs. What is your opinion of this?
- From your experience with LLP students who left the University, what were their general reasons for leaving?
- Is there any way the LLP experience could be changed to help solve some of those departure reasons?
- [Honors Group] Honors students had a significantly higher 1st year GPA than other student groups. Data also show that students in these programs are more inclined to believe that BU provides support to help students succeed academically. Can you comment on this result in terms of both the students' preparation in coming to college as well as the support the honors program provides them?
- BU administered the National Survey of Student Engagement last spring to freshmen from the entering class of 2013. Here are questions that were asked of freshmen, including some of your students, about levels of engagement with faculty and peers, as well as levels of academic engagement. Do you feel that their participation in _____ provides students with more opportunity for academic or social engagement than other students?

- Here are data looking at students in _____ compared to students in other Learning Programs or traditional housing. Compared to students in traditional housing or other Learning Program types, your students have stronger engagement measures. Would you comment on how you think these reflect or don't reflect the student's experience?
- NSSE looks at high impact classes, including participation in learning communities where students take two or more classes together. Here are the responses from KHC. How would you interpret this distribution?
- Can you provide an example from your observations of the students that might support or contradict these results?
- Certain LLPs have a significant number of freshmen that were placed as opposed to applying for residency. How do you feel this affected students' experience?
- How did you interact with both types of students? Were there differences in your interactions between the two groups?
- Do you feel the students who were placed benefited in any way from LLP residency?
- Can I contact you again if I have any additional questions?

Informed Consent Format:

You are invited to participate in a research study about the influence of living learning communities on undergraduate student's academic success. Linette Decarie is conducting this study in partial fulfillment of the degree requirements for the Doctorate in Education Program at Boston University's School of Education. Participants in this study include academic and student advisors and resident assistance assigned to work with specific living learning communities at BU.

Participation in this study is voluntary. If you agree to take part in this study, you will be asked about your role in BU's living learning community, as well as your perception of the academic support provided to students through the LLPC and how this support affects their college experience. The interview should take approximately 20 to 30 minutes of your time [*In Student RA form*: for which you will receive a \$10 Starbucks gift card].

The main risk of allowing us to use and store your information for research is a potential loss of privacy. We will protect your privacy by keeping your information in a password-protected computer. You will not be identified in the final research results. Interviews will be recorded and transcribed, and the recordings will be

deleted. Study findings will be presented only in summary form with selected excerpts used to highlight salient points. Your name would not be used in any report. There are no benefits to you from taking part in this research.

You may choose not to be in the study or to stop being in the study before it is over at any time. This will not affect your class standing or your grades at Boston University. You will not be offered or receive any special consideration if you take part in this research study. If you decide to withdraw from this study, the information that you have already provided will be kept confidential.

This research is being conducted under the supervision of Dr. Mary Shann, Professor of Educational Leadership and Policy Studies at Boston University's School of Education (shann@bu.edu). If you have any questions about this study, please contact Linette Decarie at decarie@bu.edu. If you have questions about your rights as a research participant, please contact the Boston University Institutional Review Board (617-358-6115 or irb@bu.edu).

I have read the attached informed consent letter and agree to participate in the study.

Participant Name/Signature Date

Investigator Name/Signature Date

<p>Study Title: Examining the Effects of Living-Learning Communities on First-Year Success of Undergraduates IRB Protocol Number: 3609E Consent Form Valid Date: November 14, 2014 Study Expiration Date: September 24, 2015</p>

		Need-Based Aid	Loan Aid	Undeclared in Semester 2	Credits Att. Vs. Earned	QI Students	QI Faculty	Evalexp Poor	Evalexp Fair	Evalexp Good	Evalexp Excellent
Retention Indicator	Pearson Correlation Sig. (2-tailed) N	.022** .006 15933	.006 .421 15933	.008 .321 15933	-.189** .000 15933	.066** .000 3938	.022 .162 3888	-.078** .000 3814	-.058** .000 3814	.009 .595 3814	.048** .003 3814
1st Year GPA	Pearson Correlation Sig. (2-tailed) N	.049** .000 15933	.068** .000 15933	-.013 .112 15933	-.550** 0.000 15933	.001 .966 3938	.127** .000 3888	-.035* .031 3814	-.108** .000 3814	-.043** .008 3814	.123** .000 3814
Gender (1 = Male)	Pearson Correlation Sig. (2-tailed) N	-.040** .000 15933	-.044** .000 15933	-.014 .074 15933	.056** .000 15933	-.030 .060 3938	.008 .611 3888	.040* .013 3814	.043** .008 3814	-.056** .001 3814	.019 .237 3814
Non- Resident Alien Indicator	Pearson Correlation Sig. (2-tailed) N	-.337** 0.000 15933	-.397** 0.000 15933	.019 .018 15933	.091** .000 15933	-.035* .030 3938	-.028 .081 3888	-.012 .477 3814	.055** .001 3814	.051** .002 3814	-.086** .000 3814
Unknown Race / Ethnicity	Pearson Correlation Sig. (2-tailed) N	.003 .737 15933	.011 .149 15933	.027** .001 15933	-.015 .055 15933	-.006 .714 3938	-.011 .478 3888	.007 .661 3814	.025 .121 3814	.012 .474 3814	-.030 .063 3814
Hispanic	Pearson Correlation Sig. (2-tailed) N	.201** .000 15933	.158** .000 15933	-.016* .039 15933	.021** .009 15933	.005 .764 3938	-.029 .073 3888	.007 .687 3814	-.008 .630 3814	-.009 .567 3814	.013 .422 3814
Asian	Pearson Correlation Sig. (2-tailed) N	.104** .000 15933	.060** .000 15933	-.021** .008 15933	0.0082 .301 15933	-0.025 .117 3938	-.064** .000 3888	0.013 .422 3814	.064** .000 3814	.038* .019 3814	-.084** .000 3814
Black	Pearson Correlation Sig. (2-tailed) N	.142** .000 15933	.102** .000 15933	-.022** .006 15933	.021** 0.009 15933	-.019 .228 3938	-0.012 .459 3888	0.0014 .932 3814	0.0049 .761 3814	0.0285 .078 3814	-.033* .042 3814
White	Pearson Correlation Sig. (2-tailed) N	-0.011 .169 15933	.096** .000 15933	.002 .837 15933	-.083** .000 15933	.044** .006 3938	.087** .000 3888	-0.008 .634 3814	-.087** .000 3814	-.078** .000 3814	.139** .000 3814
Other Race / Ethnicity	Pearson Correlation Sig. (2-tailed) N	.045** 0.000 15933	.049** 0.000 15933	0.004 .612 15933	0.0019 .808 15933	0.009 .574 3938	.013 .416 3888	-.007 .682 3814	-0.014 .381 3814	0.0149 .359 3814	-0.004 .786 3814
SAT (00s)	Pearson Correlation Sig. (2-tailed) N	.082** .000 15914	.107** .000 15914	.048** .000 15914	-.044** .000 15914	-.012 .464 3938	.029 .074 3888	.031 .053 3814	-.005 .778 3814	-.041* .011 3814	.037* .021 3814

		Need-Based Aid	Loan Aid	Undeclared in Semester 2	Credits Att. Vs. Earned	QI Students	QI Faculty	Evalexp Poor	Evalexp Fair	Evalexp Good	Evalexp Excellent
High School GPA	Pearson Correlation Sig. (2-tailed) N	.175** .000 15862	.161** .000 15862	.024** .002 15862	-.115** .000 15862	.043** .008 3923	.027 .093 3873	-.026 .111 3799	-.053** .001 3799	-.035* .032 3799	.077** .000 3799
Honors LLP	Pearson Correlation Sig. (2-tailed) N	-0.014 .086 15933	.003 .722 15933	-.004 .620 15933	-.024** .002 15933	.041** .010 3938	.037* .021 3888	0.0042 .796 3814	-0.027 .100 3814	-.042** .009 3814	.060** .000 3814
Academic LLP	Pearson Correlation Sig. (2-tailed) N	.038** .000 15933	0.0126 .113 15933	-.020** .010 15933	-.022** 0.006 15933	-.015 .350 3938	-0.012 .471 3888	-0.003 .877 3814	-0.012 .455 3814	0.0078 .628 3814	0.0004 .978 3814
Special Interest LLP	Pearson Correlation Sig. (2-tailed) N	-0.005 .559 15933	-.021** .007 15933	.006 .432 15933	-0.005 .551 15933	-.003 .873 3938	.012 .472 3888	-0.017 .291 3814	0.0124 .445 3814	0.0189 .243 3814	-.023 .151 3814
Traditional Housing	Pearson Correlation Sig. (2-tailed) N	-.029** 0.000 15933	-0.005 0.525 15933	.018* .023 15933	.030** .000 15933	-0.001 .941 3938	-.007 .655 3888	.006 .708 3814	0.0177 .275 3814	0.0032 .845 3814	-0.016 .313 3814
LLP Choice Indicator	Pearson Correlation Sig. (2-tailed) N	.044** .000 15933	.035** .000 15933	-.036** .000 15933	-.029** .000 15933	.007 .660 3938	.012 .464 3888	-0.006 .702 3814	.004 .785 3814	-.031 .057 3814	.030 .060 3814
Unmet Need	Pearson Correlation Sig. (2-tailed) N	-.615** .000 15933	-.439** .000 15933	.016* .049 15933	.020** .010 15933	.010 .549 3938	.026 .112 3888	-.018 .263 3814	.001 .935 3814	-.011 .496 3814	.015 .352 3814
Pell Indicator	Pearson Correlation Sig. (2-tailed) N	.536** .000 15933	.330** .000 15933	-.007 .392 15933	0.0097 .220 15933	-.037* .019 3938	-.041* .011 3888	-0.018 .269 3814	0.0195 .228 3814	.014 .373 3814	-0.023 .154 3814
Merit Aid	Pearson Correlation Sig. (2-tailed) N	-.087** .000 15933	.067** .000 15933	-.026** .001 15933	-.048** 0.000 15933	.010 .551 3938	.059** .000 3888	0.0004 .981 3814	-0.019 .237 3814	-.057** .000 3814	.072** .000 3814
Need- Based Aid	Pearson Correlation Sig. (2-tailed) N	1 .000 15933	.653** .000 15933	-.015 .063 15933	-.028** .000 15933	-.018 .260 3938	-.022 .163 3888	-0.001 .928 3814	-0.007 .663 3814	-6E-04 .970 3814	.006 .730 3814
Loan Aid	Pearson Correlation Sig. (2-tailed) N		1 15933	-.017* .028 15933	-.056** .000 15933	0.0034 .833 3938	.004 .802 3888	-.014 .397 3814	-.044** .006 3814	-0.022 .178 3814	.055** .001 3814

		Need-Based Aid	Loan Aid	Undeclared in Semester 2	Credits Att. Vs. Earned	QI Students	QI Faculty	Evalexp Poor	Evalexp Fair	Evalexp Good	Evalexp Excellent
Undeclared in Sem. 2	Pearson Correlation Sig. (2-tailed) N			1 15933	.036** .000 15933	-.047** .003 3938	-.052** .001 3888	.004 .811 3814	.031 .055 3814	.045** .006 3814	-.067** .000 3814
Credits Att. Vs. Earned	Pearson Correlation Sig. (2-tailed) N				1 15933	-.057** .000 3938	-.073** .000 3888	.064** .000 3814	.065** .000 3814	.010 .544 3814	-.069** .000 3814
QI Students	Pearson Correlation Sig. (2-tailed) N					1 3938	.363** .000 3883	-.193** .000 3797	-.248** .000 3797	-.094** .000 3797	.306** .000 3797
QI Faculty	Pearson Correlation Sig. (2-tailed) N						1 3888	-.175** .000 3751	-.253** .000 3751	-.150** .000 3751	.363** .000 3751
evalexp Poor	Pearson Correlation Sig. (2-tailed) N							1 3814	-.044** .006 3814	-.123** .000 3814	-.097** .000 3814
Evalexp Fair	Pearson Correlation Sig. (2-tailed) N								1 3814	-.352** .000 3814	-.277** .000 3814
Evalexp Good	Pearson Correlation Sig. (2-tailed) N									1.000 3814	-.771** .000 3814
Evalexp Excellent	Pearson Correlation Sig. (2-tailed) N										1.000 3814

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

BIBLIOGRAPHY

- ACT, Inc. (2014). *National Collegiate Retention and Persistence to Degree Rates*. Retrieved from http://www.act.org/research/policymakers/pdf/retain_2014.pdf
- Astin, A. W. (1977). *Four Critical Years: Effects of College on Beliefs, Attitudes, and Knowledge* (1st ed.). San Francisco: Jossey-Bass.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25(4), 297–308. 1999
- Astin, A. W. (1993). *What Matters in College? Four Critical Years Revisited* (1st ed.). San Francisco: Jossey-Bass.
- Astin, A. W. (1997). How “good” is your institution’s retention rate? *Research in Higher Education*, 38(6), 647–658.
- Astin, A. W. (2005). Making sense out of degree completion rates. *Journal of College Student Retention*, 7(1–2), 5.
- Astin, A. W., & Lee, J. J. (2003). How risky are one-shot cross-sectional assessments of undergraduate students? *Research in Higher Education*, 44(6), 657–672.
- Astin, A. W., & Oseguera, L. (2005). *Degree Attainment Rates at American Colleges and Universities*. Higher Education Research Institute, University of California Los Angeles.
- Astin, A.W., & Osegeura, L. (2012). Pre-college and institutional influences on degree attainment. In A. Seidman (Ed.), *College Student Retention* (2nd ed., pp. 81–100). Plymouth, UK: Rowman & Littlefield.
- Atieno, O. (2009). An analysis of the strengths and limitation of qualitative and quantitative research paradigms. *Problems of Education in the 21st Century*, 13(1), 13–38.
- Baird, L. L. (2000). College climate and the Tinto model. In Braxton, J.M. (Ed.), *Reworking the Student Departure Puzzle* (1st ed., pp. 62–80). Vanderbilt University Press.
- Barlow, R. (2013). Meet the Class of 2017. *BU Today*. Retrieved from <http://www.bu.edu/today/2013/meet-the-class-of-2017/>
- Baum, S., & Ma, J. (2012). *Trends in College Pricing*. The College Board Advocacy & Policy Group. Retrieved from <http://trends.collegeboard.org>

- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155–187.
- Berger, J. B. (1997). Students' sense of community in residence halls, social integration, and first year persistence. *Journal of College Student Development*, 38(5), 441–452.
- Berger, J. B., & Milem, J. F. (1999). The role of student involvement and perceptions of integration in a causal model of student persistence. *Research in Higher Education*, 40(6), 641–664.
- Boston University. (2009). *Report of the Residence Life Task Force*.
- Boston University (2013). *Charles River Campus Map*. Retrieved from <http://www.bu.edu/orc/files/2013/06/Charles-River-Campus-Map.pdf>
- Boston University (n.d.). *Kilachand Honors College*. Retrieved from <http://www.bu.edu/khc/>
- Boston University Federal Relations (n.d.). *Boston University Basics*. Retrieved from <http://www.bu.edu/federal/policymakers/boston-university-basics/>
- Boston University Financial Assistance (2015). *Renewal Criteria by Scholarship*. Retrieved from <http://www.bu.edu/finaid/types-of-aid/scholarships-grants/merit-based/renewal-criteria-by-scholarship/>
- Boston University Housing Office (n.d., a). *Freshmen*. Retrieved from <http://www.bu.edu/housing/living/freshmen/>
- Boston University Housing Office (n.d., b). *Specialty Communities & Living-Learning Communities*. (2015). Retrieved from <http://www.bu.edu/housing/residences/specialty/>
- Boston University Institutional Research (2014). *Boston University Fact Sheet*. Retrieved from <http://www.bu.edu/oir/factsheet/>
- Bozick, R. (2007). Making it through the first year of college: The role of students' economic resources, employment, and living arrangements. *Sociology of Education*, 80(3), 261–284.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2011). *Understanding and Reducing College Student Departure: ASHE-ERIC Higher Education Report, Volume 30, Number 3* (Vol. 16). John Wiley & Sons.

- Brower, A. M., & Inkelas, K. K. (2010). Living-learning programs: One high-impact educational practice we now know a lot about. *Liberal Education*, 96(2), 36–43.
- Brown, R. (2010). *State of the University, October 2010 Management Conference*.
- The Budget for Fiscal Year 2012: Department of Education* (2010). Washington, D.C.: Office of Management and Budget.
- Cabrera, A. F., Nora, A., & Castaneda, M. B. (1992). The role of finances in the persistence process: A structural model. *Research in Higher Education*, 33(5), 571–593.
- Caison, A. L. (2005). Determinants of systematic retention: Implications for improving retention practice in higher education. *Journal of College Student Retention*, 6(4), 425–441.
- Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: testing the linkages. *Research in Higher Education*, 47(1), 1–32.
- Center for Postsecondary Research. (2016). *National Survey of Student Engagement*. Retrieved from <http://nsse.indiana.edu/>.
- Chapman, D. W., & Pascarella, E. T. (1983). Predictors of academic and social integration of college students. *Research in Higher Education*, 19(3), pp. 295–322.
- Chen, R. (2011). Institutional characteristics and college student dropout risks: A multilevel event history analysis. *Research in Higher Education*, 53(5), 487–505.
- Chen, R., & DesJardins, S. L. (2008). Exploring the effects of financial aid on the gap in student dropout risks by income level. *Research in Higher Education*, 49(1), 1–18.
- Choudaha, R., and Schulmann, P. (2014). *Bridging the gap: Recruitment and retention to improve international student experiences*. NAFSA: Association of International Educators.
- CollegeBoard (2009). *SAT-ACT Concordance Tables*. Retrieved from <http://research.collegeboard.org/programs/sat/data/concordance>.

- Cope, R. G., & Hannah, W. (1975). *Revolving College Doors: The Causes and Consequences of Dropping Out, Stopping Out, and Transferring*. New York: Wiley.
- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 2nd Ed.* California; Sage Publications.
- DeBerard, M. S., Spielmans, G. I., & Julka, D. L. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal, 38*(1), 66–88.
- Department of Education. (2011). *College Completion Tool Kit*. Retrieved from https://www.whitehouse.gov/sites/default/files/college_completion_tool_kit.pdf
- Department of Education. (2016). *College Scorecard*. Retrieved from <https://collegescorecard.ed.gov/>.
- DesJardins, S. L., Ahlburg, D. A., & McCall, B. P. (2002). Simulating the longitudinal effects of changes in financial aid on student departure from college. *Journal of Human Resources, 37*(3), 653–679.
- Engstrom, C., & Tinto, V. (2008). Access without support is not opportunity. *Change: The Magazine of Higher Learning, 40*(1), 46–50.
- Fenske, R. H., Dillon, K. A., & Porter, J. D. (1997). Studying the impact of federal and state changes in student aid policy at the campus level. *New Directions for Institutional Research, 1997*(95), 83–97.
- Frazier, W., & Eighmy, M. (2012). Themed residential learning communities: The importance of purposeful faculty and staff involvement and student engagement. *Journal of College and University Student Housing, 38*(2), 10–31.
- Gallup-Purdue (2015). *Great Jobs, Great Lives: The Relationship Between Student Debt, Experiences and Perceptions of College Worth*. Retrieved from <http://www.wfyi.org/files/wfyi/files/gpi-report-2015-09-25-2015.pdf>.
- Getzlaf, S. B., Sedlacek, G.M., Kearney, K. A., & Blackwell, J. M. (1984). Two types of voluntary undergraduate attrition: Application of Tinto's model. *Research in Higher Education, 20*(3), 257–268.
- Gifford, D. D., Briceno-Perriott, J., & Mianzo, F. (2006). Locus of control: Academic achievement and retention in a sample of university first year students. *Journal of College Admission, 191*, 18–25.

- Griffith, A., & Rask, K. (2007). The influence of the US News and World Report collegiate rankings on the matriculation decision of high-ability students: 1995–2004. *Economics of Education Review*, 26(2), 244–255.
- Gonyea, R. M. (2006, May). The relationship between student engagement and selected desirable outcomes in the first year of college. [Paper from the 46th Annual Association for Institution Research Forum]. Retrieved from http://nsse.indiana.edu/pdf/research_papers/gonyea_air2006.pdf.
- Gurría, A. (2011). Editorial: Fifty Years of Change in Education. In *Education at a Glance 2011: OECD Indicators* (2011, pp. 13–20). OECD Publishing.
- Hagedorn, L. S. (2012). How to define student retention: A new look at an old problem. In A. Seidman (Ed.), *College Student Retention* (2nd ed., pp. 81–100). Plymouth, UK: Rowman & Littlefield.
- Haynes, C., & Janosik, S. M. (2012). Faculty and staff member benefits from involvement in living-learning programs. *Journal of College and University Student Housing*, 38(2), 32–45.
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating “sense of belonging” in first year college students. *Journal of College Student Retention: Research, Theory & Practice*, 4(3), 227–256.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 70(4), 324–345.
- Iffert, R. E. (1958). Retention and withdrawal of college students, US Department of Health, Education, and Welfare, Office of Education. *Bulletin*, (1).
- Inkelas, K. (2008). *National Study of Living-learning Programs: 2007 Report of Findings*. Retrieved from <http://drum.lib.umd.edu/bitstream/handle/1903/8392/2007+NSLLP+Final+Report.pdf?sequence=1>.
- Inkelas, K. K., Johnson, D., Lee, Z., Daver, Z., Longerbeam, S. D., Vogt, K., & Brown Leonard, J. (2006). The role of living-learning programs in students' perceptions of intellectual growth at three large universities. *NASPA Journal*, 43(1).
- Inkelas, K. K., & Soldner, M. (2011). Undergraduate living–learning programs and student outcomes. In *Higher Education: Handbook of Theory and Research* (pp. 1–55). Springer Netherlands.

- Inkelas, K. K., Soldner, M., Longerbeam, S. D., & Leonard, J. B. (2008). Differences in student outcomes by types of living-learning programs: The development of an empirical typology. *Research in Higher Education, 49*(6), 495–512.
- Inkelas, K. K., Vogt, K. E., Longerbeam, S. D., Owen, J., & Johnson, D. (2006). Measuring outcomes of living-learning programs: Examining college environments and student learning and development. *Journal of General Education, 40*–76.
- Inkelas, K. K., & Weisman, J. L. (2003). Different by design: An examination of student outcomes among participants in three types of living-learning programs. *Journal of College Student Development, 44*(3), 335–368.
- Institute of International Education (IIE) (2014) *Open Doors 2014: Report on International Educational Exchange*.
- Jacobi, M. (1991). Mentoring and undergraduate academic success: A literature review. *Review of Educational Research, 61*(4), 505–532.
- Kena, G., Musu-Gillette, L., Robinson, J., Wang, X., Rathbun, A., Zhang, J, Wilkinson-Flicker, S., Barmer, A. & Velez, E. D. (2015). The Condition of Education 2015. NCES 2015-144. *National Center for Education Statistics*.
- Kuh, G. D. (2001). Assessing what really matters to student learning inside the National Survey of Student Engagement. *Change: The Magazine of Higher Learning, 33*(3), 10–17.
- Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change: The Magazine of Higher Learning, 35*(2), 24–32.
- Kuh, G. D. (2009). The National Survey of Student Engagement: Conceptual and empirical foundations. *New Directions for Institutional Research, 2009*(141), 5–20.
- Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first year college grades and persistence. *Journal of Higher Education, 79*(5), 540–563.
- Kuh, S., & Hu, G. D. (2001). The effects of student-faculty interaction in the 1990s. *Review of Higher Education, 24*(3), 309–332.

- Kwai, C. K. (2009). Model of international student persistence: Factors influence retention of international undergraduate students at two public statewide four-year university systems. (Doctoral dissertation, University of Minnesota).
- Lewin, T. (2012). Taking more seats on campus, foreigners also pay the freight. *The New York Times*. Retrieved from http://www.nytimes.com/2012/02/05/education/international-students-pay-top-dollar-at-us-colleges.html?_r=0
- Lotkowski, V. A., Robbins, S. B., & Noeth, R. J. (2004). *The Role of Academic and Non-Academic Factors in Improving College Retention: ACT Policy Report*. Retrieved from <http://files.eric.ed.gov/fulltext/ED485476.pdf>.
- Mamiseishvili, K. (2012). International student persistence in US postsecondary institutions. *Higher Education*, 64(1), 1–17.
- Marshall, C., & Rossman, G. B. (1999). *Designing Qualitative Research*. 3rd Ed. London: Sage Publications.
- May, M. A. (1923). Predicting academic success. *Journal of Educational Psychology*, 14(7), 429.
- Milem, J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationship between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development*, 38(4), 387.
- Morse, R., Brooks, E. & Mason, M. (2015). *How U.S. News calculated the 2016 best colleges rankings*. U.S. News & World Report. Retrieved from <http://www.usnews.com/education/best-colleges/articles/how-us-news-calculated-the-rankings>
- NAFSA: Association of International Educators. (2014). *The international student economic value tool*. Retrieved from [http://www.nafsa.org/Explore International Education/Impact/Data And Statistics/NAFSA International Student Economic Value Tool/](http://www.nafsa.org/Explore_International_Education/Impact/Data_And_Statistics/NAFSA_International_Student_Economic_Value_Tool/)
- National Center for Education Statistics (NCES) (2015). *IPEDS Glossary*. Retrieved from <http://nces.ed.gov/ipeds/glossary/>
- National Science Foundation (NSF), National Center for Science and Engineering Statistics (2013). *Women, Minorities, and Persons with Disabilities in Science and Engineering: 2013*. Special Report NSF 13-304. Arlington, VA. Retrieved from <http://www.nsf.gov/statistics/wmpd/>.

- New England Association of Schools and Colleges (NEASC) (2011). *Standards for Accreditation*. Retrieved March 4, 2012, from <https://cihe.neasc.org/standard-policies/standards-accreditation/standards-effective-july-1-2011>
- Nora, A., Cabrera, A., Hagedorn, L. S., & Pascarella, E. (1996). Differential impacts of academic and social experiences on college-related behavioral outcomes across different ethnic and gender groups at four-year institutions. *Research in Higher Education, 37*(4), 427–451.
- OECD (2013). *Education at a Glance 2013: OECD Indicators*. OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/eag-2013-en>.
- Pascarella, E.T. (1984). College environmental influences on students' educational aspirations. *Journal of Higher Education, 55*(6), 751–771.
- Pascarella, E. T. (1985). Racial differences in factors associated with bachelor's degree completion: A nine-year follow-up. *Research in Higher Education, 23*(4), 351–373.
- Pascarella, E.T., & Chapman, D.W. (1983a). A multiinstitutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal, 20*(1), 87–102.
- Pascarella, E.T., & Chapman, D.W. (1983b). Validation of a theoretical model of college withdrawal: Interaction effects in a multi-institutional sample. *Research in Higher Education, 19*(1), 25–48.
- Pascarella, E.T., Seifert, T.A., & Blaich, C. (2010). How effective are the NSSE benchmarks in predicting important educational outcomes? *Change, 42*(1), 16–22.
- Pascarella, E.T., Smart, J.C., & Smylie, M. A. (1992). College tuition costs and early career socioeconomic achievement: Do you get what you pay for? *Higher Education, 24*(3), 275–290.
- Pascarella, E.T. & Terenzini, P.T. (1976). Informal interaction with faculty and freshman ratings of academic and non-academic experience of college. *Journal of Educational Research, 70*(1), 35–41.
- Pascarella, E.T., & Terenzini, P.T. (1978). Student-faculty informal relationships and freshman year educational outcomes. *Journal of Educational Research, 71*(4), 183–189.

- Pascarella, E.T., & Terenzini, P.T. (1979). Student-faculty informal contact and college persistence: A further investigation. *Journal of Educational Research*, 72(4), 214–218.
- Pascarella, E.T., & Terenzini, P.T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education*, 51(1), 60–75.
- Pascarella, E.T. & Terenzini, P.T. (1998). Studying college students in the 21st century: Meeting new challenges. *Review of Higher Education*, 21(2), 151–165.
- Pascarella, E.T., & Terenzini, P.T. (2005). *How College Affects Students: A Third Decade of Research (Vol. 2)*. San Francisco: Jossey-Bass Inc.
- Pascarella, E.T., Terenzini, P.T., & Blimling, G. S. (1994). The impact of residential life on students. In Schroeder, C. C., & Mable, P, *Realizing the Educational Potential of Residence Halls* (pp. 22–52). San Francisco: Jossey-Bass Inc.
- Pasque, P.A., & Murphy, R. (2005). The intersections of living-learning programs and social identity as factors of academic achievement and intellectual engagement. *Journal of College Student Development*, 46(4), 429–441.
- Pike, G. R. (1993). The relationship between perceived learning and satisfaction with college: An alternative view. *Research in Higher Education*, 34(1), 23–40.
- Pike, G. R. (1997). The effects of residential learning communities on students' educational experiences and learning outcomes during the first year of college. ASHE Annual Meeting Paper.
- Pike, G. R. (1999). The effects of residential learning communities and traditional residential living arrangements on educational gains during the first year of college. *Journal of College Student Development*, 40, 269–284.
- Pike, G. R. (2013). NSSE benchmarks and institutional outcomes: A note on the importance of considering the intended uses of a measure in validity studies. *Research in Higher Education*, 54(2), 149–170.
- Pike, G. R., Schroeder, C. C., & Berry, T. R. (1997). Enhancing the educational impact of residence halls: The relationship between residential learning communities and first year college experiences and persistence. *Journal of College Student Development*, 38, 609–621.

- Rendón, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In Braxton, J.M., *Reworking the Student Departure Puzzle* (pp. 127–156). Vanderbilt University Press.
- Robbins, S. B., Allen, J., Casillas, A., Peterson, C. H., & Le, H. (2006). Unraveling the differential effects of motivational and skills, social, and self-management measures from traditional predictors of college outcomes. *Journal of Educational Psychology, 98*(3), 598–616.
- St. John, E. P., Hu, S., Simmons, A., Carter, D. F., & Weber, J. (2004). What difference does a major make? The influence of college major field on persistence by African American and White students. *Research in Higher Education, 45*(3), 209–232.
- Scott, M., Bailey, T., & Kienzl, G. (2006). Relative success? Determinants of college graduation rates in public and private colleges in the U.S. *Research in Higher Education, 47*(3), 249–279.
- Sexton, V. S. (1965). Factors contributing to attrition in college populations: Twenty-five years of research. *Journal of General Psychology, 72*(2), 301–326.
- Shaw, E. J., Kobrin, J. L., Patterson, B. F., & Mattern, K. D. (2012). The validity of the SAT for predicting cumulative grade point average by college major (2012-6). Retrieved from www.collegeboard.org/research.
- Shear, M.D. (2010). Taking more seats on campus, foreigners also pay the freight. *The New York Times*. Retrieved from Obama speech ties U.S. need for more college graduates to the economic recovery. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2010/08/09/AR2010080904278.html>
- Side, M. W., & McReynolds, J. (2009). The freshman year experience: Student retention and student success. *NASPA Journal, 46*(3), 434–446.
- Snyder, T. D., & Dillow, S. A. (2015). Digest of Education Statistics 2013. NCES 2015-011. *National Center for Education Statistics*.
- Soldner, M., & Szelényi, K. (2008). A national portrait of today's living-learning programs. *Journal of College and University Student Housing, 35*(1), 14–31.
- Spady, W. (1971). Dropouts from higher education: Toward an empirical model. *Interchange, 2*(3), 38–62.

- Stassen, M. L. (2003). Student outcomes: The impact of varying living-learning community models. *Research in Higher Education, 44*(5), 581–613.
- Stater, M. (2009). The impact of financial aid on college GPA at three flagship public institutions. *American Educational Research Journal, 46*(3), 782–815.
- Student Right-to-Know and Campus Security Act, P.L. 101-542 U.S.C. (1990).
- Summerskill, J. (1962). Dropouts from college. In N. Sanford (Ed.), *The American College: A Psychological and Social Interpretation of the Higher Learning* (pp. 627–657). New York, NY: John Wiley & Sons, Inc.
- Szelényi, K., & Inkelas, K. K. (2011). The role of living-learning programs in women's plans to attend graduate school in STEM fields. *Research in Higher Education, 52*(4), 349–369.
- Terenzini, P. T., & Pascarella, E. T. (1977). Voluntary freshman attrition and patterns of social and academic integration in a university: A test of a conceptual model. *Research in Higher Education, 6*(1), 25–43.
- Terenzini, P. T., & Pascarella, E. T. (1978). The relation of students' precollege characteristics and freshman year experience to voluntary attrition. *Research in Higher Education, 9*(4), 347–366.
- Terenzini, P. T., Pascarella, E. T., & Blimling, G. S. (1999). Students' out-of-class experiences and their influence on learning and cognitive development: A literature review. *Journal of College Student Development, 40*(5), 610–623.
- Ting, S. R., & Robinson, T. L. (1998). First year academic success: A prediction combining cognitive and psychosocial variables for Caucasian and African American students. *Journal of College Student Development, 39*(6), 599–610.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89–125.
- Tinto, V. (1982). Limits of theory and practice in student attrition. *Journal of Higher Education, 53*(6), 687–700.
- Tinto, V. (1988). Stages of student departure: Reflections on the longitudinal character of student leaving. *The Journal of Higher Education, 59*(4), 438–455.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago; London: University of Chicago Press.

- Tinto, V. (1996). Reconstructing the first year of college. *Planning for Higher Education*, 25(1), 1–6.
- Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. *Review of Higher Education*, 21(2), 167–177.
- Tinto, V. (2005a). Moving from theory to action. *College student retention: Formula for student success*, 317–333.
- Tinto, V. (2005b). Student retention: What next? *2005 National Conference on Student Recruitment, Marketing, and Retention*. Washington, D.C.
- Trowler, V. (2010). Student engagement literature review. *The Higher Education Academy*, 11, 1–15.
- Trustees of Boston University (2012). *Boston University Charles River Campus 2012–2022 Institutional Master Plan*. Retrieved from <http://www.bu.edu/community/files/2012/08/IMP.pdf>
- Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education*, 46(2), 153–184.
- Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *Review of Higher Education*, 27(1), 45–73.
- Zhao, C., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, 45(2), 115–138.

CURRICULUM VITAE

Linette A. Decarie

Institutional Research, 25 Buick Street, Boston, MA 02215

Decarie@bu.edu ■ 617/353-2256

Experience

Boston University Institutional Research

Director of Institutional Research

2006–present

2013 – present

- Responsible for all aspects of the management and administration of the institutional research, academic management, and systems support areas of IR, including oversight of research, programming and administrative staff.
- Supervise the production and development of enrollment and tuition revenue projections totaling over \$1 billion for the university, in order to support budget development and strategic planning by administrative and academic services. Support the University's budget planning process through the production of data reports and presentations.
- Oversee the University's enrollment management process, aiding in the enrollment of approximately 3,500 freshmen and 500 transfers during the academic year. In collaboration with Admissions and Financial Aid, manage predictive models and monitoring reports for student admissions, enrollment forecasts, and financial aid expenditures. Support Enrollment and Student Affairs with routine and ad hoc data reporting.
- Produce ad hoc reports as requested by the President, Provost, and senior administration.
- Support the University's student retention and graduation initiatives with the production of routine and ad hoc data reports for use in strategic planning. Assist with the University's goal of increasing freshmen-to-sophomore retention to 95% by providing data and analytic support.
- Developed central data support process for the University's Academic Program Review (APR). Worked with Provost's Office to define procedures for APR. Worked with the program leadership in review process to support self-study productions.
- Oversee the administrative needs of Institutional Research, recruitment of new staff, development and maintenance of operating procedures, performance evaluations and staff motivation, development, discipline and salary reviews.
- Supervise data sharing with various consortia, including the Association of American Universities Data Exchange (AAUDE), which includes over 15 formal exchange topics and additional ad hoc requests with the 60 member institutions. Serve as representative at annual AAUDE meetings and on-going discussions.
- Represented Boston University at local, regional and national conferences and meetings, including active participation in data-sharing and other professional associations with peer universities.

- Provided support and information for University committees, including the Finance and Budget committees, NEASC accreditation steering committee, the steering committee to implement data warehousing, and University committees evaluating and implementing new data systems.
- Committee activity includes: Student Engagement Working Group (Member); Data Subcommittee of the Student Engagement Working Group (Chair); Focus Group Subcommittee of the Student Engagement Working Group (Member); Strategic Enrollment Management Group (Member), Living-Learning Programs Review Committee (Member); Sexual Assault Climate Survey Development Committee (Member); University Accreditation Steering Committee (*Ex Officio* Member).

Associate Director, Office of Institutional Research 2007 – 2013

Assistant Director, Office of Institutional Research 2006 – 2007

- Managed the research operation within Institutional Research, coordinating the efforts of five staff working in collaboration with the Office programming staff, the Office of the Budget, and other University and external constituents.
- Coordinated and monitored all institutional research, academic planning, enrollment management, and budgeting projects within the Office.
- Organized the collection, verification and distribution of data for University-wide projects, such as the NSF survey of research doctoral programs.
- Supervised design and implementation of the Office website to facilitate the flow of information and documentation with University constituents, academic peers, and other external sources.
- Produced financial and operational resource proposals for new University program initiatives.
- Participant at regional and national conferences and meetings, including active participation in data-sharing and other professional associations with peer universities.

Boston University – School of Management

2000 – 2006

Manager, Market Research & Information

2005 – 2006

- Managed research and analysis that directly impacted the School's marketing strategy campaigns. Leveraged results to develop a new brand identity for the School.
- Designed market surveys to gauge alumni satisfaction and developed a marketing strategy for increasing the school's approval rating and leveraging alumni relationships for marketing and business development purposes.
- Supervised website redesign to more effectively target constituents and to reflect new brand identity.
- Counseled School's departments on the design and implementation of individual market and brand research projects while ensuring integration with the overall school market and brand research initiatives.
- Analyzed ranking results and developed internal and external strategic plan to improve School's position in national and international publications.

Program Manager, Planning & Analysis

2000 – 2005

- Directed annual reporting process, communicating the activities of multiple departments and programs for the purpose of self-assessment and projection of future goals to University and accreditation officials.
- Managed School benchmarking projects, including research and data analysis used in program development and School strategy planning.
- Analyzed student satisfaction and other data leading to program improvements and new initiatives.
- Evaluated School workload, staffing, and salary patterns to project and streamline human resource initiatives and budgetary requirements.

Boston University – Marine Program, College of Arts & Sciences

1998 – 2000

Senior Staff Coordinator

- Supervised Program's courses, including expenditures, and teacher selection and performance.
- Administered staff and student payroll and purchasing with budgets totaling \$500,000.
- Maintained grant and departmental budgets totaling \$1 million.
- Managed program staff and student employees in course execution and special event planning.

Harvard School of Public Health

1997 – 1998

Research Assistant, Center for Prevention of Cardiovascular Disease

- Worked in team environment to coordinate research of principle investigators.
- Identified and analyzed gene expression, established new protocols, trained researchers for proficiency in techniques.

Education**Boston University School of Education**

2016

Doctor of Education

- Thesis topic: Examining the Effects of Living Learning Programs on First Year Success of Undergraduates
- Certificate completion in Program Planning, Management, Monitoring & Evaluation

Boston University School of Management

2002

Master of Business Administration

- High honors
- Beta Gamma Sigma Honor Society

Boston University Marine Program

1996

Master of Arts in Biology

- Thesis: Role of Programmed Cell Death in Cancer & Chemotherapy

University of Miami

1995

Bachelor of Science

- Majors: Biology and Marine Science; Minors: Chemistry and Psychology
- University Honors and Dean's List

Professional Affiliations

- Association of American Universities Data Exchange (AAUDE)
 - *Presentations:* Graduate Education Panel (Moderator - 2014); Academic Analytics and the Boston University Academic Program Review (Vendor Session Presentation – 2014)
- National Association of Institutional Research (AIR)
 - *Presentations:* Reflections of Year One: Academic Program Review at Boston University (2013); NEASC Commission on Higher Education requirements for documentation of assessment of student learning and student success in the accreditation process: Four Case Studies (2010)
- Northeastern Association of Institutional Research (NEAIR)
- Boston-Area Association of Institutional Research (BAIR)
- New England Association of Schools and Colleges (NEASC)