

AN EXAMINATION OF STUDENT COMPLETION  
IN A COLLEGIATE HONORS PROGRAM

By

KAY CELESTE CAMPBELL

Bachelor of Arts  
Oklahoma State University  
Stillwater, Oklahoma  
1979

Master of Science  
Oklahoma State University  
Stillwater, Oklahoma  
1987

Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the Degree of  
DOCTOR OF PHILOSOPHY  
May 2006

© 2006 K. Celeste Campbell  
All rights reserved

AN EXAMINATION OF STUDENT COMPLETION  
IN A COLLEGIATE HONORS PROGRAM

Dissertation Approved:

Dr. Dale Fuqua

---

Dissertation Advisor

Dr. Janice Miller

---

Dr. Katy Perry

---

Dr. Adrienne Hyle

---

Dr. James Choike

---

Dr. A. Gordon Emslie

Dean of the Graduate College

## ACKNOWLEDGMENTS

I consider myself extremely fortunate to have worked with the five faculty members who served as my doctoral committee. To Dale Fuqua, my dissertation advisor, thank you for your competent guidance, your kind demeanor, and your wealth of knowledge and wisdom. To Janice Miller, my committee chair, thank you for taking the initiative to introduce me to the REMS doctoral program and for believing in my potential to earn this degree. To Katy Perry, thank you for your instruction and your consistent encouragement. To Adrienne Hyle, thank you for your leadership in the higher-education-administration area of my degree plan and for your bright and thoughtful input. To Jim Choike, thank you for 30 years of serving as my mentor and good friend.

I am grateful to Bob Spurrier, OSU Honors College Director, for unselfishly encouraging my professional and educational development. Your willingness to support my research interests is greatly appreciated. To the advisors in the Honors College, both past and present, it is the adventures shared with you—the meaningful challenges and joys of working with honors students—that inspired this study.

Although not mentioned by name, I acknowledge my fellow students and friends. Without their camaraderie, I would not have survived.

Finally, I thank my family: my brother, Craig, who was my earliest critic; my parents, my original and best teachers, for always making me feel that I am important to you and instilling in me the desire to accomplish my goals; and my sons, Nathan, Aaron,

and Logan, of whom I am immensely proud. To my husband, Alan, I am deeply grateful for your patience, your optimism, your encouragement, your counseling, and your love through the highs and the lows of this endeavor.

## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION .....	1
Statement of the Problem .....	3
Purpose of the Study .....	4
Significance of the Study .....	4
Definition of Terms .....	5
Research Questions .....	7
Assumptions .....	8
Limitations .....	8
Organization of the Study .....	9
II. REVIEW OF LITERATURE.....	11
Theoretical Foundation: Student Persistence Theories.....	12
Predictors of College Persistence and Completion.....	17
Pre-entry Variables .....	17
Academic ability and prior performance.....	17
Family and community background.....	18
Personal attributes.....	19
College Performance and Integration .....	20
Goals and Commitments.....	24
College Persistence and Completion of Honors Students.....	24
Predictors of Honors Program Persistence and Completion .....	26
The Honors Program Setting and Characteristics of Honors Students.....	26
Literature on Honors Program Persistence and Completion.....	30
Summary .....	35
III. METHODOLOGY .....	38
Subjects .....	39
Institutional Context.....	41
Design .....	41
Variables .....	42
Procedures.....	48
Data Analysis.....	48

Chapter	Page
IV. RESULTS .....	49
Initial Examination of Data .....	51
Missing Data.....	51
Multicollinearity .....	52
Assumptions .....	53
Outliers.....	54
Preliminary Screening Analyses.....	54
The Discriminant Analysis.....	59
Summary of Results.....	64
V. DISCUSSION AND CONCLUSIONS .....	66
Review of the Study.....	67
Discussion .....	68
Honors Program Completion Rate.....	68
Most Important Predictor Variables.....	70
First-semester cumulative grade point average (CUMGPA). .....	70
High school grade point average (HSGPA) and high school class rank (HSRANK). .....	72
First-semester housing (HOUSING).....	74
Gender (GENDER). .....	76
Other variables that demonstrated a significant relationship with award group.....	76
Variables That Were Not Important Predictors.....	78
How the Award Completion Groups Differ .....	78
Conclusions .....	80
Limitations .....	81
Theoretical Implications.....	82
Practical Implications.....	83
Implications for Future Research.....	86
REFERENCES.....	88
APPENDIXES	
APPENDIX A—OSU HONORS PROGRAM FACT SHEET 2000-2001.....	97
APPENDIX B—INSTITUTIONAL REVIEW BOARD APPROVAL .....	100

## LIST OF TABLES AND FIGURES

Table	Page
1. Honors Persistence Predictor Variables.....	44
2. Summary Chart of Variables Categorized by Their Relationship to Tinto’s (1993) Model .....	47
3. Comparisons by Group for Continuous Predictor Variables .....	56
4. Comparisons by Group for Categorical Predictor Variables .....	58
5. Classification Results.....	61
6. Discriminant Function Structure Coefficients and Standardized Canonical Coefficients.....	63
7. Group Centroids .....	64
8. Pearson Correlations for CUMGPA, HSGPA, and HSRANK .....	74
Figure	Page
1. Tinto’s Longitudinal Model of Institutional Departure .....	14
2. Honors Award Completion for New OSU Freshmen Entering Fall 2000 .....	50
3. Graph of Group Centroids.....	79



## CHAPTER I

### INTRODUCTION

Honors programs (and honors colleges as they are called in some institutions) are prevalent at colleges and universities across the country, as evidenced by the membership of the National Collegiate Honors Council—802 institutions as of December 2004 (NCHC, 2004). Honors programs provide small classes, increased faculty contact, a challenging curriculum, and other benefits for academically talented undergraduate students. Students who complete honors program requirements typically earn special awards and graduation distinctions, such as honors degrees and transcript notations for individual honors courses (Basic characteristics, 2000). Most honors programs base their initial admission decisions on such criteria as high school grades, high school class rank, standardized test scores (e.g., ACT or SAT), essays, and interviews (Brown, 2001).

Although student persistence in college is a heavily researched topic, persistence in collegiate honors programs has received very little research attention. Various factors have been shown to predict college persistence and completion, such as high school GPA (Astin, 1975; Smith, Edminster, & Sullivan, 2001), ACT or SAT scores (Astin, 1975; Beecher & Fischer, 1999), and socioeconomic status (Adelman, 1999; Smith et al., 2001). In addition to these pre-entry variables, measures of integration into the college environment, such as place of residence and first-semester GPA, are also key predictors of whether students will drop out or continue to degree completion (Astin, 1975; Tinto, 1993). The question of whether or not the same factors that predict college persistence will also predict persistence and completion in honors programs has been the topic of very few empirical studies. Two examples of such studies are those conducted by McDonald and Gawkoski (1979) and Roufagalas (1993).

### *Statement of the Problem*

In spite of the high academic ability of honors students and the enhanced support that honors environments provide, the number of students who complete honors degree requirements is dismally low. In recent years at Oklahoma State University (OSU), the setting for this study, beginning freshman classes of over 300 honors students have yielded approximately 70 honors degrees after four or five years (OSU Honors College, 2004, 2005). This honors award completion rate is not atypical for honors programs across the country. For example, Cosgrove (2004b) discovered a 27% honors-degree completion rate when he examined three universities in Pennsylvania.

Non-completion of honors requirements carries personal, family, and institutional consequences. An element of pride and self-worth is associated with a new college student's acceptance into an honors program and the accompanying label of "honors student." When a student ceases to participate in the program and this label is removed, feelings of academic-related inadequacy and family disappointment often result, particularly if the student is involuntarily removed from the program because of failure to maintain honors eligibility requirements. Just as the retention and graduation rates of a college are very public and important measures of institutional academic quality, the retention and completion of students within an honors program serve as measures of the ability of the program to accomplish its goal to provide an environment that enhances and supports the academic achievements of high-ability students. (An example of the use of graduation and retention rates as measures of institutional quality is seen in the comparison criteria for the *U. S. News and World Report* annual "best colleges" list ("Best National Universities," 2005).) Successful honors programs play a crucial role in

supporting student success, recruiting top students, attracting donor attention, and elevating the overall environment and status of their home institutions. These programs must continually prove that they are succeeding, however, if they hope to compete for the substantial resources that their home institutions set aside to support them (Campbell, 2005a), and one important measure of program success is the completion rate of its students. Research is needed to identify factors that predict honors persistence and completion. Such research will assist honors programs to select students who are most likely to persist and to support those students in their quest to attain an honors degree.

#### *Purpose of the Study*

The purpose of this study is to explore factors that differentiate between three groups of Oklahoma State University students: (1) students who completed Honors Degree requirements (39 honors credit hours with a GPA of 3.50 or higher); (2) students who completed only General Honors Award requirements (21 honors credit hours with a GPA of 3.50 or higher); and (3) students who began college as honors program participants but did not complete any honors award requirements.

#### *Significance of the Study*

This study contributes significantly to the current body of knowledge about honors programs and honors students—both theoretically and practically. Persistence in honors programs is a complex and illusive phenomenon, and this study joins very few others in the exploration of this phenomenon. The theoretical contribution includes a test of the application of Tinto's (1993) *theory of student departure*, the basic theoretical foundation for the study, to the honors program setting. Tinto proposed that a student's decision to persist in or depart from college is dependent upon the extent to which he or

she is academically and socially integrated into the institution, and this integration depends upon the student's pre-entry attributes, goals and commitments, and institutional experiences. This model is discussed in more detail in Chapter II.

In a practical sense, the results of the current study provide a better understanding of the distinguishing characteristics and experiences of students who persist in an honors program when compared with those who do not persist. This study identifies a set of variables that help distinguish between honors persisters and non-persisters. This information can be used to assist the OSU Honors Program (and other similar honors programs) with the evaluation of their admission criteria, their program requirements, and their student support services. Similar research findings recently played a major role in the process used by OSU Honors Program administrators as they determined which strategy would best limit enrollment numbers that were expanding faster than available resources. A simple and logical strategy would have been to raise freshman admission requirements, which are based on ACT score (27) and high school grade point average (3.75). However, findings by Campbell (2005b) suggested that the ACT score (with range 27-36) was actually a negative predictor of student progress in the honors program, that is, the higher the ACT score, the fewer honors hours students were completing. This data served to validate anecdotal evidence gathered by the administrators. Instead of raising the minimum ACT admission score, a decision was made to impose an application deadline before which all students meeting the eligibility criteria would be admitted and after which students would be admitted only on a space-available basis.

#### *Definition of Terms*

Completion (college)—the attainment of a bachelor's degree.

Completion (honors program)—the attainment of an Honors Program Degree.

General Honors Award—a distinction that denotes the completion of honors program requirements tied to general education courses. In the institutional setting of this study, the General Honors Award requires a minimum 3.50 GPA and the completion of 21 honors credit hours including a breadth requirement and two honors seminar courses. See Appendix A for details. Students usually finish the General Honors Award requirements during the first two years of college.

Honors Degree (or Honors Program Degree)—a graduation distinction that denotes the completion of all honors program requirements. In the institutional setting of this study, the Honors Degree requires a minimum 3.50 GPA and the completion of 39 honors credit hours including a thesis. See Appendix A for details.

Honors program—an undergraduate program that provides enhanced curricular offerings, increased faculty contact, academic counseling, and support facilities (such as study lounges and computer labs) for academically talented students (Basic characteristics, 2000). See Appendix A for a thorough description of the honors program that serves as the setting for this study.

Honors student—an undergraduate student who participates in a collegiate honors program. The subjects of this study are honors students who were considered “active” participants in the honors program during their first semester of college, that is, they were engaged in at least six credit hours of honors work. Two forms of honors work were possible: enrolling in honors sections of courses or doing individual honors contract projects in non-honors courses.

Non-honors student—an undergraduate student who is not an honors program participant.

Persistence (college)—a student’s continuation from one college semester or year to another subsequent semester or year. With a few exceptions (e.g., Adelman, 1999), college persistence is commonly measured by continued enrollment at a single institution; therefore, in addition to dropouts, students who transfer to other institutions are considered non-persisters at a specific college (e.g., DesJardins, Kim, & Rzonca, 2003; Krosteng, 1992).

Persistence (honors program)—the continued participation in an honors program from one semester or year to another subsequent semester or year. It is important to note that a lack of persistence in an honors program does not imply a lack of persistence in college, that is, students who drop out of an honors program do not necessarily drop out of the college that houses the program.

#### *Research Questions*

The following research questions guide this study:

1. Is it possible to predict levels of honors program completion? Specifically, are there linear combinations of predictor variables that provide for the classification of individual students into honors completion groups at a rate that is a significant improvement over chance classification?
2. Assuming such linear combinations exist, what is the strength of the relationship between the set of predictors and the criterion? In other words, how effective is the classification?
3. Which of the variables, individually or in combination with other variables, contribute most to the prediction of honors program completion?
4. How are the honors completion groups different?

### *Assumptions*

The underlying paradigm or knowledge claim for this study is postpositivism, which is based on the assumption that, although absolute truth or knowledge can never be found, research shapes knowledge by using measurement and observation to examine causes that influence outcomes. Such research utilizes a quantitative process to reduce phenomena into a small set of ideas to test (specific variables) and research questions to answer (Creswell, 2003, chap. 1). Postpositivist studies seek to “approximate the truth rather than aspiring to grasp it in its totality or essence” (Crotty, 1998, p. 29). In addition, this study was conducted based on the assumption that the data obtained from honors program and university records is accurate. Every effort was made to verify such accuracy. It was also assumed that the data satisfies the prerequisite requirements for predictive discriminant analysis (the statistical procedure for this study), namely, an adequate sample size, multivariate normality, and the existence of homogeneous covariance matrices (Stevens, 2002, chap. 6).

### *Limitations*

This study is limited in its breadth in that it examines students from only one institution. However, the results will be of interest to other honors programs that are similar to the one at Oklahoma State University in size, admission criteria, curricular offerings, support systems (such as honors advising and honors housing), and student demographic characteristics. Another limitation is that only one freshman class of honors students is tracked from matriculation until graduation. Follow-up studies should replicate the process for subsequent years to determine whether similar results would be obtained for those groups.



The set of predictor variables used in this study is not exhaustive. Absent from the study are measures that have been examined in other college or honors program persistence studies, such as educational aspirations (Pascarella, Duby, Miller, & Rasher, 1981), emotional intelligence (Edman & Edman, 2004), personality traits (Tinto, 1993, chap. 3), affiliation with Greek social organizations (Hutchison & Johnson, 1980), amount of informal faculty-student contact (Tinto, 1993, chap. 3), and student employment during college (Astin, 1975, chap. 4). Additionally, as with all behavioral research, the predictor variables included in this study are merely proxies for the real behaviors or characteristics that are sought in the examination (Gay, Mills, & Airasian, 2006, chap. 1).

#### *Organization of the Study*

The sections of this paper are organized as follows: Chapters I – III constitute the proposal section and were written prior to and in preparation for the study; Chapters IV and V report the results of the study and elaborate upon these results. Specifically, Chapter II provides an overview of research findings that relate to both college and honors program persistence and completion. The theoretical foundation for the current study is discussed, along with the potential contribution of the study in light of the limitations of existing literature. Chapter III provides the methodology that will be used to conduct the study, including a description of the subjects, the institutional context, the variables, the study design and procedures, and plans for data analysis. The results of the data analysis are reported in Chapter IV, followed by a discussion of the results in Chapter V. This discussion examines the findings in detail and discusses possible reasons

for the findings, implications of the findings, and recommendations for further research on the topic.

## CHAPTER II

### REVIEW OF LITERATURE

The purpose of this chapter is to provide an overview of prior research findings that are relevant to the current study. The body of the review is divided into three major sections: (1) Student Persistence Theories—a discussion of theories that strive to explain why some students persist in college while others drop out, focusing primarily on Tinto’s (1993) *theory of student departure*, which is the basic theoretical foundation for the study; (2) Predictors of College Persistence and Completion—a review of research that illuminates factors that predict college persistence and completion, both in the general student population and in the honors student population; and (3) Predictors of Honors Program Persistence and Completion—an examination of literature that describes the participants of the study, honors students, followed by an analysis of the small body of work that focuses directly on the topic of this study: student persistence and completion in collegiate honors programs. The chapter culminates with a final section that summarizes the major findings in the literature, identifies the limitations of these findings, and explains the potential contribution of the current study to the existing body of literature.

#### *Theoretical Foundation: Student Persistence Theories*

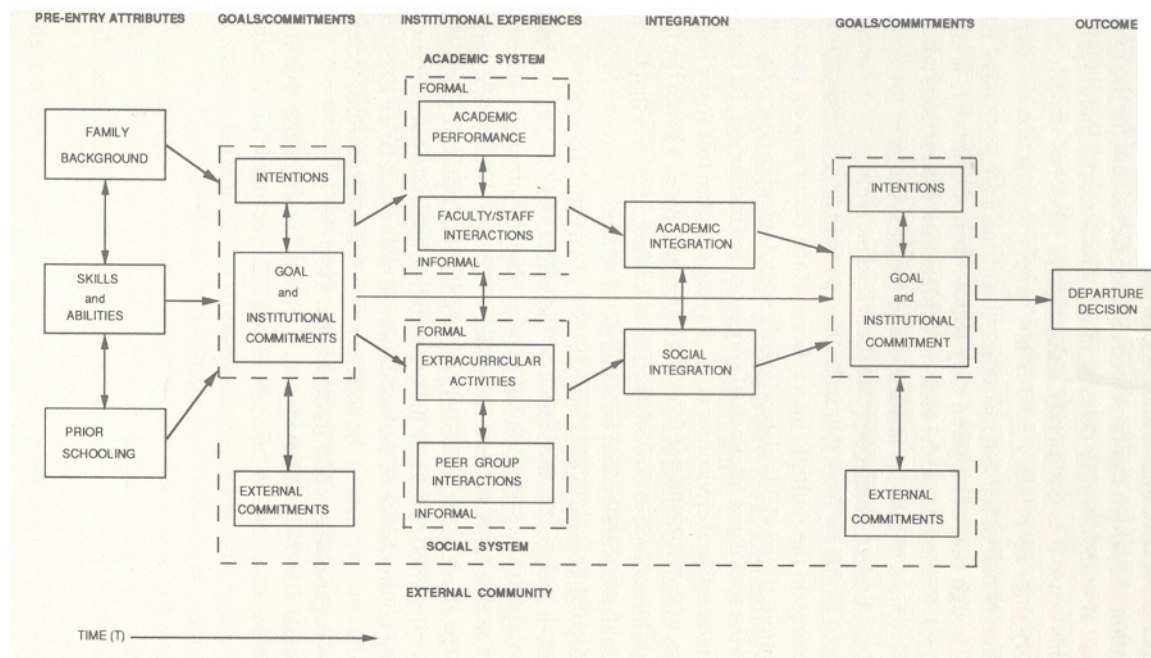
Although no theories of honors program persistence exist, within the last 30 years two prominent theories of general college persistence have been established and extensively tested: Astin’s (1975) *theory of college persistence* and Tinto’s (1993) *theory of student departure*. Both of these theories provide a theoretical basis for research that seeks to determine why some students finish college while others do not, and both can be extended to the honors program setting.

Astin (1975) developed his theory from a national, longitudinal study that was designed to identify factors that influence college persistence. The basic premise of the *theory of college persistence* (which was later extended to a student development theory—the *theory of student involvement* (Astin, 1984)) is that students who are directly involved in the academic and social lives of their campuses are less likely to drop out of college than students who are more detached from their campus environments. He defined student involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (Astin, 1984, p. 297). Student involvement is related to factors such as interaction with faculty; residing on campus; participation in social fraternities and sororities, extracurricular activities, and honors programs; and part-time, on-campus employment. A student’s academic performance in college bears a strong relationship to persistence, and Astin considered good grades to be an indicator of academic involvement in the institution.

No study of college persistence would be complete without acknowledging Astin’s contribution to solving the persistence puzzle. Another major contributor is Vincent Tinto. Like Astin, Tinto (1993) recognized the importance of student academic and social involvement as it relates to a student’s decision to remain in or depart from an institution. To Tinto, however, involvement was only one part of the larger, more important concept of integration. His *theory of student departure* contends that a student’s decision to persist or depart is dependent upon the extent to which he or she is academically and socially integrated into the institution (college).

Tinto (1993) formulated a graphic, longitudinal model that illustrates the effects of pre-entry attributes and institutional experiences upon an individual student’s

academic and social integration into the institutional environment. See Figure 1. According to Tinto's model, pre-entry attributes (such as family background, skills and abilities, and prior schooling) affect initial goals and commitments, which in turn influence institutional experiences (such as academic performance, faculty/staff interactions, extracurricular activities, and peer group interactions). These institutional experiences determine the level to which a student becomes academically and socially integrated into the institution. The level of this integration contributes to the reformulation of the student's initial goals and commitments, and these newly modified goals and commitments subsequently determine the ultimate educational outcome: to persist or to depart from the institution.



*Figure 1.* Tinto's longitudinal model of institutional departure. From *Leaving College* (p. 114), by V. Tinto, 1993, Chicago: University of Chicago Press. Copyright 1993 by The University of Chicago. Reprinted with permission.

Although the institutional setting for Tinto's (1993) theory is clearly a college or university, prior research suggests that the theory may also be applied to an honors program setting (Feldman, 1992). Honors programs exist as sub-environments within a college environment, therefore honors students are influenced by both the honors program environment and the larger institutional environment. A well-developed honors program has nearly all of the components of a college: students who have met specific admission criteria, honors faculty and classes, honors academic advising, an honors residence hall, social events, and a facility designated for honors studying and social gatherings (Basic characteristics, 2000). The decision to persist or depart from college translates into the decision to persist to the completion of honors program award requirements or to depart from the honors program before awards are earned. Departure from the honors program does not necessarily imply departure from the institution as a whole. The variables in this study that are being tested as predictors of honors persistence align with the components of Tinto's model as shown in Chapter III, Tables 1 and 2.

A key component in Tinto's (1993) *theory of student departure* is the extent to which a student becomes integrated into the academic and social aspects of the institution, and a crucial time for this integration is during the first year of college. "Attrition is, for most institutions, most frequent during the first year of college. Nearly half of all leavers depart before the start of the second year" (Tinto, 1998, p. 169). Thus, measures of early experiences that lead to integration into the college and honors program environments are potentially important predictors of persistence. As shown in Figure 1, examples or indicators of these experiences are academic performance, interactions with faculty, and peer-group interactions. In this study, three variables are

used to measure experiences leading to and/or resulting from successful integration into the university environment: the cumulative GPA after one semester of college, the number of credit hours earned at the end of the first semester of college, and the initial college of enrollment within the university (Arts and Sciences, Engineering, Education, etc.). The variables that are used to measure experiences leading to and/or resulting from successful integration into the honors program environment are the number of honors courses in which a student is enrolled during the first semester, the number of times that the student used the honors study lounge/computer lab during the first semester, and whether or not a student lived in the honors residence hall during the first semester. Literature related to these variables that influence integration is addressed in subsequent sections of this review.

Tinto's (1993) theory has been extensively scrutinized and tested, and various modifications have been proposed. For example, Braxton and Lien (2000) focused on Tinto's concept of academic integration in their assessment of peer-reviewed empirical studies that tested the influence of academic integration on institutional commitment and persistence. Their examination revealed strong empirical backing for Tinto's theory with multi-institutional studies, but only modest backing for studies that focused on single institutions. *Reworking the Student Departure Puzzle* (Braxton, 2000) is a collection of critiques of Tinto's work by various authors. It also includes proposed, yet untested, revisions to Tinto's theory. Feldman (1992) tested a slightly modified version of Tinto's model to predict involuntary dismissal of students from an honors program. Although her results were tempered by a small sample size, they support the use of the model in an honors program setting. The current study proposes to add to the existing body of



literature that utilizes Tinto's work as a theoretical basis, while also testing it in a largely unexplored setting: the collegiate honors program.

### *Predictors of College Persistence and Completion*

College persistence is a heavily researched topic, and the body of persistence and completion literature is vast. Pantages and Creedon (1978) and Tinto (1975) have provided extensive reviews of the persistence research that was conducted prior to the mid-1970s. The primary focus of this section is on more recent college persistence literature that closely relates to the current study and that helps illuminate the potential usefulness of the predictors specified in the study.

#### *Pre-entry Variables*

##### *Academic ability and prior performance.*

Two college pre-entry variables that emerge in the literature as key predictors of college persistence are academic ability, as measured by ACT or SAT scores, and prior academic performance, as measured by high school GPA and, to a lesser extent, high school class rank. Test scores have been shown to contribute significantly to college persistence, but their effect has not been as consistently strong as the high school GPA (Astin, 1975; Beecher & Fischer, 1999; Smith et al., 2001). In general, the literature strongly supports the relationship between high school GPA and college GPA and the power of high school GPA to directly and indirectly predict both persistence and degree completion (Hutchison & Johnson, 1980; Smith et al., 2001). Astin (1975) found that, in addition to high school GPA, high school class rank made an independent contribution to predicting persistence. Exceptions arise in the literature, however, such as the finding that high school academic performance was not a significant predictor of freshman year

persistence at an urban, nonresidential campus (Pascarella et al., 1981). Another exception is Adelman's (1999) extensive longitudinal study of factors affecting degree completion. He found both high school GPA and standardized test scores to be relatively weak contributors to degree attainment when compared with factors such as the academic intensity and quality of the high school curriculum. Adelman constructed his curriculum variable using a complex formula that included the number of Advanced Placement (AP) courses included on a student's transcript. Other studies support the positive relationship of AP courses or exam credits to college persistence (Astin, 1975; DesJardins et al., 2003).

*Family and community background.*

Academic pre-entry variables are not the only predictors of college persistence found in the literature. Another dimension is represented by variables that reflect family and community background. Three such variables are socioeconomic status (SES), parent educational level, and the size of the student's high school and/or hometown community. Socioeconomic status, often measured by family income, has been positively correlated with college persistence (Adelman, 1999; Astin, 1975; Hutchison & Johnson, 1980). Smith et al. (2001) found that SES, as measured by Pell Grant eligibility, was a powerful predictor of degree completion. Contrary to these results, however, DesJardins et al. (2003) found no significant family income effects on degree completion at the University of Iowa. Closely related to SES, parent educational level made an independent contribution to the prediction of college dropouts in Astin's (1975) work. He also found that growing up in a small town was more consistently related to dropping out of college than living in cities, suburbs, or on farms. Although Roufagalas (1993) found no effect of

rural vs. urban high schools in his study of honors student college GPAs, he did find a statistically significant, positive relationship between high school size and grade point. This finding is not consistent throughout the literature however. For example, after controlling for ACT score, Cashen (1970) found that students from medium-sized high schools had significantly higher first-semester college GPAs than students from either large or small high schools. Anderson (1974) reported that students from the smallest high schools withdrew from college at significantly higher rates than graduates of larger high schools. The pattern in the literature of categorizing high schools by size places schools within four to six levels, with less than 100 students in the smallest category, the largest category varying from 500 to 2000 or more students, and the middle levels differing in between (e.g., Cashen, 1970; Edington, 1981; Page & Hammermeister, 1996).

*Personal attributes.*

There is no clear consensus in the literature regarding the importance of gender and race/ethnicity in predicting college persistence and completion, however these personal attributes are often used as control variables because of their potential effect (e.g., Pascarella & Terenzini, 1980). In their examination of the behaviors and attitudes of honors program freshmen, Noldon and Sedlacek (1998) found academic-related gender differences. Honors women reported studying significantly more than honors men, and men had significantly higher expectations of finding a mentor and establishing relationships with faculty. Similarly, Shushok's (2002) work suggests that honors program participation has a positive effect on male student engagement with faculty, but the same is not evident for female students. McDonald and Gawkoski (1979) found

gender differences when considering factors that predicted honors degree completion: both high school GPA and math SAT scores were significant predictors for males, whereas only the math SAT was significant for females. Some college persistence studies focusing on the general student population have disclosed gender differences (e.g., Dey, 1990), while others found that gender did not significantly affect persistence (e.g., Beecher & Fischer, 1999). DesJardins et al. (2003) detected no gender differences in their study of graduation rates, whereas Smith et al. (2001) found that the effects of high school GPA, ACT, and SES on college completion varied by gender.

Smith et al. (2001) also found that race made a difference in the effect that high school GPA, ACT, and SES had on college completion. In contrast, other completion studies have found no significant contribution of the race variable (Adelman, 1999; DesJardins et al., 2003). In their discriminant analysis to determine factors that affected persistence in an urban, nonresidential university, Pascarella, Duby, Miller, and Rasher (1981) reported that race was one of nine pre-enrollment variables that significantly discriminated students who persisted in college from those who did not. Astin's (1975) large-scale national study found that Orientals and Whites had the lowest college dropout rate (19% and 24%, respectively) while Chicanos and American Indians tied for the highest rate of dropout (31%) (p. 36).

### *College Performance and Integration*

According to Tinto (1993), the pre-entry variables discussed thus far shape the goals and commitments that a student initially brings to college. These goals and commitments in turn affect the student's early experiences in the college setting and whether or not he or she becomes integrated into the college setting. Consequently, the

extent to which the student becomes integrated into the academic and social life of his or her institution has a crucial effect upon whether that student remains at the institution and ultimately completes a degree (Tinto, 1993, 1998). Four of the variables in the current study are tied to early institutional integration: the student's initial field of study; the initial housing assignment; the number of credit hours earned after one semester; and the first semester cumulative college GPA.

In the literature on college persistence, a student's initial field of study (specific major or general area within the university) is an integration variable that has been included as a control because of its potentially important correlation with dropout behavior (e.g., Pascarella & Terenzini, 1980). Although Astin (1975) found that the field of study did not significantly contribute to his prediction model of college persistence, he did note the pattern that students with certain majors dropped out of college at higher rates than others. Among the fields with the lowest dropout rates in four-year colleges were military science, pre-medical, pre-dental, biochemistry, chemical engineering, and political science. Areas of highest dropout rates were secretarial studies, forestry, electronics, and nursing (chap. 2). In their analysis of factors affecting bachelor's degree completion, DesJardins et al. (2003) found college major to be one of the most important variables in explaining retention and graduation at the University of Iowa. Similar to the current study where majors are grouped into seven colleges within the university, they classified majors into eight areas: Arts, Business, Engineering, Education, Health (medicine, pharmacy, and nursing), Humanities, Natural Science, and Social Sciences. Students in the Humanities had the highest odds of dropping out, while those in Business and Engineering had the lowest. Of the students who survived past the freshman year,

Business, Engineering, and Health majors had significantly higher odds of graduating than those in the Social Sciences.

Another important variable shown in the literature to influence the social integration and subsequent persistence of college students is their initial residence. Astin (1975, chap. 5) found that freshmen living in dormitories were less likely to drop out than those living at home or in apartments and that, although examined with a relatively small sample size, freshmen living in sororities or fraternities had an even greater reduction in dropout rate. Astin proposed that “living in a fraternity or sorority may carry with it even greater student involvement in peer relationships and campus social life than living in a dormitory” (p. 95).

This leads to another specialized type of student housing: the honors residence hall. Before the widespread adoption of separate honors housing facilities, DeCoster (1966) compared the academic performance and withdrawal rate of high ability students who lived together in specific housing units (not honors housing per se) with those who were randomly assigned to other campus residential units at the University of Florida. Results suggested that high-ability students had better academic success, as measured by college GPA, when living in close proximity with other high-ability students. In addition, although not reaching statistical significance, the high-ability students who lived in close proximity with other high-ability students had a lower withdrawal rate than did the group that was randomly assigned. Empirical research that directly focuses on the effects of living in honors housing is almost non-existent. In her review of studies related to honors housing, however, Rinn (2004) concluded “The combined effects of participating in an honors program and living in an honors residence hall would appear to result in large

positive gains for the academic achievement and aspirations of gifted college students” (p. 70). At the same time, she expressed concern over the potential social effects of segregated honors housing stemming from the formation of narrow peer groups and isolation from the rest of the campus environment.

Successful early academic performance reflects positive institutional experiences that are closely tied to academic integration. An important measure of early academic performance that is frequently found in the literature is cumulative college GPA, and in particular, freshman year GPA. “Getting good grades is a sign of student involvement in the academic life and environment of the institution” (Astin, 1975, p.176). In his study of multiple variables that predicted college persistence, Astin (1975, chap. 5) singled-out the undergraduate GPA as the variable most closely related to staying in college. Extending Astin’s results to the honors program setting should be done with caution, however, because the seven-category GPA scale used by Astin (3.75-4.00, 3.25-3.74, 2.75-3.24, 2.25-2.74, 1.75-2.24, 1.25-1.74, and less than 1.25) reflects far more variance than is likely to be present in the honors program setting. Many other studies confirm the significant power of early measures of college GPA to predict persistence (Cabrera, Nora, & Castaneda, 1993; DesJardins et al., 2003; Pascarella et al., 1981).

Although not as prevalent in the literature as college GPA, a final measure of academic performance and integration is the number of credit hours attempted or earned during the first year of college (e.g., Pascarella et al., 1981). DesJardins et al. (2003) found that the more credit hours a student attempted during the freshman year, the more likely the student was to persist to the second year and to ultimately reach graduation.

### *Goals and Commitments*

The goals and commitments present in Tinto's (1993) model are measured in a variety of ways in the literature. Astin (1975, chaps. 1-2) measured student educational aspirations by surveying the degree plans of entering college freshmen. He found that students who aspired to obtain a doctorate or professional degree were most likely to persist in college, while those whose aspirations were to earn a bachelor's or associate's degree were most likely to drop out. When studying persistence and dropout behavior, Pascarella et al. (1981) measured student aspirations by their responses to Astin's Cooperative Institutional Research Program (CIRP) Survey taken during freshman enrollment. The survey included items focusing on the highest degree expected, the perceived likelihood of failing courses, and the perceived likelihood of dropping out. Another goal/commitment measure occurring in the persistence literature is the rank ordering of the college of attendance in the student's choice of colleges (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, etc.) (Pascarella et al., 1981; Pascarella & Terenzini, 1980). This college choice variable is also interpreted in the literature as a measure of fit between the student and the institution (DesJardins et al., 2003), and institutional fit is one of the factors that have been found to enhance persistence in college (Astin, 1975, chap. 7).

### *College Persistence and Completion of Honors Students*

A small body of literature examines college persistence and completion using honors program students as subjects. Allen (2002) studied a group of honors program students at a historically black college to determine the effect of four predictor variables (high school GPA, verbal SAT score, math SAT score, and first semester college GPA) on persistence to the junior year and cumulative graduation GPA. His results indicated



that, for the honors students, the verbal SAT score and the college GPA were the strongest predictors of college persistence, whereas the high school GPA and the college GPA were most important in predicting cumulative GPA at graduation.

Other studies have compared the college persistence and completion behavior of honors students with non-honors students. Astin's (1975) longitudinal, national study focusing on college dropouts found that "Participation in honors programs is uniformly associated with improved chances of college completion" (p. 103). Lucas, Hull, and Brantley (1995) found that students who had completed at least one honors course at William Rainey Harper College in Illinois had a higher graduation rate than the general student population (37% versus 31%). Similarly, the 2002 Program Completion Rate Report from St. Cloud State University in Minnesota showed that students who participated in their honors program had higher completion (graduation) rates than did the rest of the student body: the six-year completion rate of honors students was 72%, while that of the university at large was 39% (St. Cloud State University, 2002).

It is not surprising that a group of high-ability students would generally perform better than a lower-ability group when examining measures of academic success, such as graduation rate or college grade point average. Instead of comparing honors students with the general student body, Cosgrove (2004b) chose to compare students of similar academic ability in an effort to determine whether honors participation made a difference in grades, retention, and graduation. He examined the academic performance (mean GPA after 5 years) and graduation rates of three groups: honors completers ( $n = 30$ ); students who started in honors but did not complete ( $n = 82$ ); and high-ability students who did not participate in the honors program ( $n = 108$ ). Cosgrove drew his sample from three

public, four-year colleges within the Pennsylvania State University system. Using sex, SAT score, and college major as control variables, he found that the graduation rate and the mean college GPA for the honors completer group was significantly higher than the other two groups, but that the partial honors students were not significantly different from the non-honors, high-ability students. He also reported data on graduation time: 77% of the honors completers graduated in four years, compared with 61% of partial honors students and 57% of non-honors students.

Cosgrove's (2004b) work provides an increased understanding of the differences between students who are partial honors program participants, students who complete honors degrees, and high-ability students who do not participate in honors programs. An important contribution of Cosgrove's work that is almost non-existent in the literature is the reporting of an honors program completion rate for the three institutions: 27% of the students who began college in the honors program earned the honors degree. The focus of Cosgrove's study, however, was not specifically on honors program persistence or completion, but on possible effects of the level of honors program participation upon general college success and completion. The following section turns to literature relating to the primary focus of the current study—honors program persistence and completion. To help establish the context of the study, background information on the honors program setting and the differences between honors and non-honors students is also provided.

### *Predictors of Honors Program Persistence and Completion*

#### *The Honors Program Setting and Characteristics of Honors Students*

Over the last 50 years, honors programs (and honors colleges as they are called in some institutions) have evolved at colleges and universities across the country. These

programs attract high-ability students and provide benefits such as small classes, increased faculty interaction, research and independent study opportunities, an enriched curriculum, special honors advising, and optional honors housing (Austin, 1991, chap. 1). To provide a perspective on the prevalence of honors programs, 802 institutions were members of the National Collegiate Honors Council as of December 2004 (NCHC, 2004).

Honors programs are designed to foster academic success, and it is no surprise that the environmental and affective conditions that are present in honors programs, such as small classes and increased faculty-student interaction, are shown in the literature to increase student satisfaction and academic success (Anaya & Cole, 2001; Gibbs & Lucas, 1996; Scheck & Kinicki, 1994; Volkwein & Cabrera, 1998). Other aspects of honors program participation include a curriculum that supports higher-order thinking skills, special academic advising for honors students, and socialization with other high-ability students. Enrollment in honors programs is positively correlated with self-reported growth in critical thinking skills (Tsui, 1999) and academic and interpersonal gains (Ory & Braskamp, 1988). Turner and Berry (2000) found that students who received ongoing counseling on academic progress (such as the academic advising provided by honors programs) showed superior retention when compared to their peers. It has also been shown that socialization with high-ability peers fosters academic achievement (DeCoster, 1966).

Honors programs usually use some combination of high school grade point average, ACT or SAT scores, and essay or interview for initial admission criteria, therefore honors program students are, by definition, at the top end of the academic

ability scale (generally the top five to eight percent for a given institution) (Austin, 1991, chap. 1). But what other characteristics distinguish honors program students from other college students? When compared to college norms, research suggests that honors students tend to be more prompt in completing assignments; have a higher need for achievement; are more autonomous; have a lower need for deference and are thus less conforming, more independent, and more confident in decision making; and are more diligent in their studies (Hickson & Driskill, 1970; Mathiasen, 1985; Palmer & Wohl, 1972). Honors students indicate a higher level of participation in campus clubs and organizations. In spite of this social participation, however, they do not show superior ability to function as team members (Ory & Braskamp, 1988). Honors students have significantly higher learning-orientation scores and significantly lower grade-orientation scores than non-honors students (Stephens & Eison, 1986-87). They are less likely to be minority students and are more likely to be younger than the general student population (Lucas et al., 1995). The parents of honors students are more likely to possess graduate or professional degrees than the parents of non-honors students (Gerrity, Lawrence, & Sedlacek, 1993).

There is a lack of consensus on the issue of whether honors students have a higher locus of control than non-honors students. Mathiasen (1985) reports no difference in locus of control, whereas Stephens and Eison (1986-87) found that honors students had higher internal locus of control scores, indicating that they are more likely to accept personal responsibility for their behavior. They also found that, compared to non-honors students, honors students worried less about money and school and more about the management of time. When restricting their comparison group to students who were

qualified for the honors program but chose not to participate, however, Stephens and Eison found the honors-qualified group to be basically identical to the honors group on tests of personal and educational characteristics.

In recent years, emotional intelligence has emerged in the literature as a characteristic that distinguishes honors students from non-honors students. Mayer and Salovey (1997) defined emotional intelligence as

the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. (p. 10)

Castro-Johnson and Wang (2003) found that honors students at a large metropolitan research university had higher emotional intelligence scores than non-honors students, and Edman and Edman (2004) reported that emotional intelligence was a significant predictor of the decision to enroll in the honors program at a selective, private, liberal arts college.

Although the studies presented in this section provide general insight into the nature of honors students and characteristics that distinguish them from their non-honors peers, they should be interpreted with a note of caution. The vast majority of the studies were conducted using only students from a single institution as subjects. It cannot be assumed that students studying at different institutions have precisely the same characteristics, nor can it be assumed that honors programs at different institutions are homogeneous. An examination of Peterson's Guide, *Honors Programs and Colleges* (Digby, 2002), reveals that honors programs are not completely uniform in their size,

their admission requirements, their participation requirements, or their curricular offerings.

### *Literature on Honors Program Persistence and Completion*

The literature that focuses directly on student persistence and completion in collegiate honors programs is quite sparse. Several studies have measured success in honors programs by evaluating the cumulative college grade point average of honors students after a period of time (Allen, 2002; Pflaum, Pascarella, & Duby, 1985; Phillips, 2004; Roufagalas, 1993, 1994; Shushok, 2002), but only a few studies have attempted to discover factors that influence a student's decision to enroll in honors programs, stay in honors programs, or ultimately earn honors degrees. This section reviews three such studies and discusses how they inform the current research.

McDonald and Gawkoski (1979) explored the correlation of high school GPA, verbal SAT scores, and math SAT scores with success in the honors program at Marquette University. Success was measured by the completion of honors degree requirements: "the maintenance of a minimum GPA of 3.00 and the completion of at least 46 credits in specially designed, challenging Honors courses" (p. 412). Ten freshman cohorts of honors program students were tracked from admission to graduation ( $n = 402$ ). All three variables were significantly correlated with honors degree attainment, with high school GPA bearing the strongest relationship ( $r = .45$ ;  $p < .01$ ). Upon examination by gender, however, differences were found. For men ( $n = 206$ ), the relationship between SAT-verbal and the success criterion was not significant. For women ( $n = 196$ ), all three correlations were statistically significant, but the SAT-math was the most highly correlated with the criterion. McDonald and Gawkoski failed to

report a major statistic of interest: the honors program completion rate, i.e., the percentage of the freshmen honors students who earned the honors degree upon graduation.

Because this study related pre-entry variables to honors degree attainment, it supports the use of high school GPA and test scores as predictors in the current study. However, the design selected by McDonald and Gawkoski (1979) used only bivariate correlations to determine the predictive power of a small number of pre-entry variables. No multivariate analysis was performed to examine the combined effects of these variables. The study also examined only two outcomes: honors degree completion (success) or non-completion (failure) with no partial completion element. The isolated examination of a small number of strictly pre-entry variables results in a simplistic design that is far from representative of the complex nature of the topic setting.

Like McDonald and Gawkoski (1979), Roufagalas (1993) examined pre-entry variables to determine their ability to predict success of both honors and non-honors students during the first two years of college. Roufagalas improved upon the design of McDonald and Gawkoski, however, by using multiple regression with a larger number of predictor variables. At Radford University, he examined a cohort of freshmen, which included students who initially enrolled in honors courses ( $n = 130$ ), students who were invited to participate in the honors program but declined ( $n = 85$ ), and a random sample of the general non-honors student population ( $n = 147$ ). Predictor variables were the following admission (pre-entry) variables: high school location (rural or urban), high school GPA, size of high school graduating class, percentile high school class rank, verbal SAT score, math SAT score, TSWE score (Test of Standard Written English—a

subset of the verbal SAT), involvement with artistic activities in high school (band, art club, dance, choral music, drama, etc.), sports involvement in high school, publication activities in high school, academic activities in high school (math club, debate, NHS, etc.), and high school service activities. Three measures served as the criterion variables: first-year cumulative college GPA, second-year cumulative college GPA, and whether or not a student enrolled in honors courses.

For the honors student group, only four of these admission variables resulted in significant b-weights in the regression equation predicting college GPA after two years: high school GPA, TSWE, academic activities (negative coefficient), and high school size. High school GPA had the strongest effect and also was the only variable that positively affected the probability of enrolling in honors courses during the freshman and sophomore years. High school rank and the verbal SAT score had smaller *negative* effects on honors course enrollment. Results varied when Roufagalas (1994) performed the same study with a new cohort. When predicting college GPA, the high school GPA effect was still strong, the TSWE was less significant, and academic activities and high school size were not significant. In the 1994 study, the only predictor of honors course enrollment that showed consistent effects with the 1993 results was high school rank. Again the lower the class rank, the more likely the student was to enroll in honors courses, all other things being equal—a counter-intuitive result. The inconsistencies between the results for the two cohorts indicate a need for further research to reveal reliable trends.

The Roufagalas studies provide insight into a student's decision to participate in an honors program and, as such, contribute information to the study of honors program



persistence. They also reveal differences between honors students and comparison groups of non-honors students, which included students who were eligible to participate in the honors program but declined. The studies provide limited persistence information, however, because they utilized only pre-entry variables and measured honors program participation by the decision to take honors courses only during the first two years of college. They did not focus on the completion of honors program requirements.

A final relevant study was performed by Feldman (1992) at the State University of New York at Buffalo. This study is similar to the current study in three ways: (1) Feldman's focus was a measure of persistence in honors program students; (2) A modification of Tinto's model of institutional departure served as the theoretical base; and (3) She used discriminant analysis to detect differences between groups of honors program students. Feldman's study is different from the current study, however, in that her two outcome groups consisted of students who were retained in an honors program and those who were involuntarily dismissed from the program (because they failed to maintain minimum academic eligibility requirements of 3.20 cumulative GPA for freshmen and 3.50 cumulative GPA for sophomores, juniors, and seniors). In contrast to the current study, which concentrates on the completion of honors program requirements, Feldman's focus was on maintaining GPA eligibility for an honors program. Eligibility requirements are certainly a necessary condition for honors degree completion, but satisfying eligibility requirements alone is not a sufficient condition to ensure completion.

The sample for Feldman's (1992) study consisted of students who were dismissed from the honors program for academic reasons between 1981 and 1988. These students were then matched on several characteristics (year entering the university, gender, major

field of study, place of residence, and SAT score within a standard deviation of 50 points) with students who were retained in the honors program, and survey instruments were sent to both groups. Of the 118 dismissed students, 29 useable responses were collected, and of the 118 retained honors students, 55 responses were received. This small sample size is a matter of concern when interpreting the results of the study, particularly when the sample is further divided by gender. (For dismissed students,  $n = 10$  females and  $n = 19$  males). Another shortcoming of the Feldman study is that she failed to define crucial terms. For example, it is unclear for the students who were retained in the honors program what their participation status involved. Were they taking a specified number of honors credit hours each semester, or was she considering every student whose GPA did not fall below the specified criteria to be a participant in the honors program regardless of their ongoing honors curricular involvement? She also provided no statistics regarding how many of the students who were retained actually graduated as “Honors Scholars,” another undefined term from the study. The study did reveal the involuntary honors program dismissal rate, however: 28% of the honors program students were dismissed from the program as a result of failure to meet the minimum GPA requirements.

In spite of its limitations, Feldman’s (1992) work is important in light of its close proximity to the current study. Feldman’s results suggest that certain elements of Tinto’s model assist in discriminating between the dismissed and persistent honors program students. Academic performance, as measured by whether or not a student had ever been on institutional academic probation, was the greatest discriminator, followed by intentions, as measured by the highest expected degree, and goals and commitments (both institutional and honors program commitments), as measured by questionnaire responses.

Other significant discriminating variables were non-classroom faculty/staff interactions, academic and intellectual development, and external commitments, which were all measured by questionnaire responses. Variables that did *not* make a significant contribution in the study include high school size, high school location, and place of residence (off-campus vs. campus vs. home). Gender differences were detected. For example, SES was a significant variable only for males, and skills and abilities, as measured by SAT score, were significant only for females.

In this section, the literature most closely related to the current study was reviewed. Each of the three studies examined in this section inform the current study in unique ways. McDonald and Gawkoski (1979) related selected pre-entry variables to honors degree completion, Roufagalas (1993, 1994) provided data on pre-entry predictors of honors student GPA and the decision to enroll in honors courses, and Feldman's (1992) work, based on Tinto's (1993) model, examined the combined ability of several variables to discriminate between students who were involuntarily dismissed from an honors program and those who were retained.

#### *Summary*

Because no theory and very little literature exist on persistence within collegiate honors programs, this review included an examination of pertinent literature on finishing college and, in particular, an exploration of the factors that have been shown to predict general college persistence and completion. Through this examination, each of the variables in the current study is supported by prior research on its ability to predict persistence, although the magnitude and consistency of these effects vary. Each variable is also rooted in Tinto's (1993) *theory of student departure*, which, though not

specifically designed for use in honors programs, serves well as the theoretical foundation for this study. Literature on the college persistence of honors students was discussed, as well as literature that reveals how the honors student population is different from the general student body. Detailed consideration was given to the three studies that most closely relate to the current study—studies that concentrate directly on student persistence and completion in honors programs (Feldman, 1992; McDonald & Gawkoski, 1979; Roufagalas, 1993, 1994). Inconsistencies in the literature on honors program completion stem from the general idiosyncratic nature of the programs themselves. Thus, a strong need exists for examination of data on a local, individual program basis, which is the nature of the current study.

Upon examination of the literature related to student persistence in honors programs, several omissions and limitations arise. A vast body of literature addresses college persistence (e.g., Adelman, 1999; Astin, 1975; Pascarella & Terenzini, 1980), but documentation of research on persistence in honors programs is almost nonexistent. The few studies that do exist are only partially applicable to the current study because of the following limitations:

- An overly simplistic design was used that included only pre-entry variables (McDonald & Gawkoski, 1979; Roufagalas, 1993, 1994);
- Persistence was measured for only two years instead of following students to the completion of their honors degrees (Roufagalas, 1993, 1994);
- Results were not consistent when the study was replicated with a new cohort (Roufagalas, 1993, 1994);
- Small sample size inhibited the interpretation of data (Feldman, 1992);

- Important constructs, such as the meaning of graduating as an “Honors Scholar,” were not defined adequately to permit a clear understanding of the variables and setting of the study (Feldman, 1992); and
- The measured outcome or dependent variable of the study was something other than the completion of honors program requirements (Feldman, 1992; Roufagalas, 1993, 1994).

The current study addresses these limitations by considering a wide range of pre-entry and post-entry variables to examine their ability to differentiate between three groups of students: (1) students who completed Honors Degree requirements; (2) students who completed only General Honors Award requirements; and (3) students who began college as honors participants but did not complete any honors award requirements. A five-year degree-completion time frame was used for the study, which is consistent with other research in the field (e.g., Cosgrove, 2004b; Schmitz, 1993). All variables in the study have been well defined, and an adequate sample size was used to ensure that results could be interpreted with confidence. It is hoped that future replications with other cohorts will further refine the understanding of what distinguishes students who persist in collegiate honors programs from those who do not persist.

## CHAPTER III

### METHODOLOGY

This chapter explains the methods that were used to conduct this study. The subjects are described, as is the institutional context for the study. The design of the study is introduced, including definitions of the variables and explanations of their theoretical ties to Tinto's (1993) model of student departure. A procedural plan for the study is presented, and data analysis strategies are discussed.

### *Subjects*

The subjects in this study are students at Oklahoma State University who were active in the honors program as new freshmen during the Fall 2000 semester. These are students who were engaged in at least six credit hours of honors work (honors courses or individual honors contract projects in non-honors classes) during their first full-time college semester. This cohort consists of 336 students. Sixty-two of the cohort students have completed the Honors Degree requirements, 73 of the students have completed the General Honors Award (but not the Honors Degree), and the remaining 201 students did not complete any honors award requirements.

For the academic year 2000-2001, new freshman eligibility for honors program participation was based on the following minimum criteria: (1) Composite ACT score of 27 and a high school grade point average 3.75; or (2) Total SAT score (verbal and math) of 1200 with a high school grade point of 3.75. Weighted grade point averages that were issued by high schools were acceptable. A provisional application process resulted in the admission of a few students to the honors program who did not meet the standard eligibility criteria. Also students were admitted to the honors program before their final high school transcripts were available, so the final high school grade point averages for some students were below the required minimum. After students completed one college

semester, continued honors program eligibility was based on the following minimum cumulative college GPA: (1) 2.75 at the end of the first semester; (2) 3.25 after the first semester and until a student has earned 60 credit hours (freshman and sophomore status); (3) 3.37 for 60-93 credit hours (junior status); and (4) 3.50 for 94 or more credit hours (senior status).

The target population for this study consists of the students who participate in the honors program at Oklahoma State University, and the primary focus of the study is to obtain results that will inform this particular program. The study sample is composed of the subjects described above—a cohort or a single entering class of students. The reliability and validity of the results of this study would be enhanced by cross-validation (testing the significant discriminant functions obtained from the study on a subsequent cohort of OSU honors students to assess their ability to predict the level of honors completion with this new group of students). If the findings of this study are confirmed by cross-validation, the results may be extended with some confidence to subsequent cohorts of OSU honors students, provided that the student characteristics, the program eligibility criteria, and other program conditions remain stable. The results of this study are not widely generalizable, but sufficient detail is provided in this chapter to allow honors administrators from other institutions to determine whether the OSU honors population and setting are similar enough to their own to suggest local applicability of the results. Before widespread generalizability is presumed, this study should be replicated in a variety of institutional and honors program settings with diverse student populations.



### *Institutional Context*

“Honors students from similar institutions (with similar selection criteria) are more likely to be similar to one another than are honors students from very different institutions (or even similar institutions with different selection criteria for honors)” (Achterberg, 2005, p. 79). The selection criteria used in the OSU Honors Program is described in the previous section. The purpose of this section is to place the subjects of this study within an institutional context in order to enhance the interpretation of the study results and to facilitate comparisons with other institutions.

Oklahoma State University is a residential, comprehensive, land-grant institution with a “Doctoral/Research Universities—Extensive” Carnegie classification (Carnegie Foundation, 2001, p. 36). The Fall 2000 enrollment at the main campus in Stillwater, Oklahoma, a rural setting, was approximately 20,000. The average composite ACT score for the 3,100 new freshmen in Fall 2000 was 23.9, and the mean age of the student body was 21.6 years. In Fall 2000, 53% of the OSU students were male and 47% were female; 79% of the students were from Oklahoma, 12% were from other states, and 8% were international students. Non-minority students comprised 85% of the university’s enrollment (Oklahoma State University, 2000).

### *Design*

This longitudinal study is designed to explore the relationship between a set of predictor variables and a categorical criterion variable, membership in honors completion groups. In particular, the study used predictive discriminant analysis techniques to answer the research questions as stated in Chapter I:

1. Is it possible to predict levels of honors program completion? Specifically, are there linear combinations of predictor variables that provide for the classification of individual students into honors completion groups at a rate that is a significant improvement over chance classification?
2. Assuming such linear combinations exist, what is the strength of the relationship between the set of predictors and the criterion? In other words, how effective is the classification?
3. Which of the variables, individually or in combination with other variables, contribute most to the prediction of honors program completion?
4. How are the honors completion groups different?

Predictive discriminant analysis is appropriate for this study because one of its primary uses is “for classifying subjects into groups on the basis of a battery of measurements” (Stevens, 2002, p. 317). A prerequisite for reliable results from predictive discriminant analysis is that the total sample size meet or exceed 20 subjects per predictor variable (Stevens, 2002, chap. 7). This study satisfies this condition. Other assumptions, which are addressed in Chapter IV, are that each of the groups is multivariate normal and that they have the same covariance matrix.

#### *Variables*

The categorical criterion (dependent) variable is divided into the following three levels (comparison groups). The time frame allowed for the completion of the honors awards is five years.

1. Completers: Students who completed the Honors Degree (N = 62);

2. Partial completers: Students who completed the General Honors Award but not the Honors Degree (N = 73); and

3. Non-completers: Students who completed no honors awards (N = 201).

Sixteen predictor (independent) variables were used because of their potential theoretical or practical relationships to the criterion. Prior research that describes these relationships is discussed in Chapter II. A listing of the predictor variables, along with their descriptions and the corresponding components of Tinto's (1993) model, is provided in Table 1. Table 2 again lists the predictor variables, along with the criterion grouping variable, categorized by the corresponding component of Tinto's model. Given the large number of predictor variables, a series of screening analyses were performed to select the best subset of variables. These analyses are described in Chapter IV.

Table 1

*Honors Persistence Predictor Variables*

Honors Persistence Predictor	Definition/Explanation	Corresponding Component of Tinto's Model
High school GPA (HSGPA)	Un-weighted final high school grade point average on a 4.00 scale.	Skills and abilities
Composite ACT score (ACT)	Highest composite ACT score. If only an SAT score is available, the score will be converted to an equivalent ACT score.	Skills and abilities
High school class rank (HSRANK)	Student's academic percentile ranking in his/her high school class, e.g., ranking first in class is equivalent to 100%.	Skills and abilities
AP or CLEP credit hours (APCLEP)	Number of credit hours earned by Advanced Placement (AP) or College Level Examination Program (CLEP) exams. This variable is used as a measure of high school curricular intensity and quality.	Prior schooling
Socioeconomic status (SES)	Measured by family income as reported on financial aid applications.	Family and community* background

High school size (HSSIZE)	Size of high school graduating class.	Family and community* background
Gender (GENDER)	Gender of the student: male (0) or female (1).	Personal attributes*
Race/Ethnicity (RACE)	Race or ethnicity as measured by OSU's ethnic code and described in OSU Student Profile (2000): White; Native American; Asian or Pacific Islander; African American; Hispanic.	Personal attributes*
First-semester cumulative college GPA (CUMGPA)	Cumulative college grade point average at the end of the Fall 2000 semester (on a 4.00 scale).	University academic performance/integration
College credit hours earned after the first semester (COLHRS)	Number of college credit hours earned (with passing grades) during the Fall 2000 semester (excludes AP/CLEP testing hours).	University academic performance/integration
College of initial enrollment (COLLEGE)	Initial academic college or major field of study (AG = Agricultural Sciences and Natural Resources; AS = Arts and Sciences, BU = Business; ED = Education; EN = Engineering, Architecture, and Technology; HE = Human Environmental Sciences)	University academic/social integration

Rank of college choice (CHOICE)	Rank of OSU as a college choice as reported by students when registering for the ACT (1 = first choice; 2 = second choice; 3 = third choice; 4 = fourth choice; 5 = no ranking).	Initial university goals/commitments
Initial credit-hour enrollment in honors courses (HONCRS)	Number of credit hours of honors courses in which a student was enrolled during the Fall 2000 semester.	Honors program academic/social integration
Initial housing assignment (HOUSING)	Place of residence during the Fall 2000 semester: honors residence hall (1) or other residence (0).	Honors program social integration and initial honors program goals/commitments
First semester use of honors program study facility (FACUSE)	Number of times that a student used the honors study lounge/computer lab during the Fall 2000 semester. (Students scan their ID cards upon entry.)	Honors program academic/social integration
University acceptance date <sup>a</sup> (ACPTDATE)	Number of months prior to the beginning of the fall 2000 semester that a student was accepted to the university. This variable may serve as a measure of planning behavior and/or parental involvement.	This variable could be tied to family background and/or initial goals and commitments.

---

Note: \*Although community background and personal attributes are not pictured in Figure 1 (Chapter II), Tinto (1993, p. 115) discussed these aspects when explaining his model. <sup>a</sup>Although not specifically grounded in the literature, ACPTDATE has practical value to the honors program as decisions regarding capping enrollment are made. Beginning with the 2006-2007 academic year, the honors program will instigate a deadline (February 1, 2006) after which qualified students will be accepted on a space-available basis.

Table 2

*Summary Chart of Variables Categorized by Their Relationship to Tinto's (1993) Model*

Pre-Entry Attributes	Goals/ Commitments	Experiences Related to Institutional and Honors Program Integration	Outcome
Skills and abilities: HSGPA ACT HSRANK	Initial university commitments: CHOICE ACPTDATE <sup>a</sup>	University academic performance: CUMGPA COLHRS	Levels of the criterion grouping variable: COMPLETERS PARTIAL COMPLETERS NONCOMPLETERS
Prior schooling: APCLEP	Initial honors program commitments: HOUSING <sup>b</sup>	University experiences: COLLEGE Honors program experiences: HONCRS HOUSING <sup>b</sup> FACUSE	
Family and community background: SES HSSIZE ACPTDATE <sup>a</sup>			
Personal attributes: GENDER RACE			

<sup>a</sup>University acceptance date, ACPTDATE, is listed twice because it can be related both to family and community background and to initial university commitments. Families that are familiar with higher education are more likely to recognize the advantages of applying early to college, such as increased availability of scholarship funds and preferred residence hall assignment. High school communities with strong college counseling offices may also encourage students to apply early to college. An early university acceptance date may also indicate a student's commitment to the university. Extremely late applicants, particularly in the honors student population, often result from a last-minute decision not to attend another university that was the student's first choice. <sup>b</sup>The HOUSING variable, indicating initial residence in honors or non-honors housing, is listed twice because it relates both to experiences that lead to honors program social integration and to initial honors program commitments.

### *Procedures*

This study was conducted by examining student records from the Fall 2000 honors program freshman cohort. The records were obtained from the OSU Honors Program and from the OSU Office of Institutional Research. The appropriate level of the criterion variable was determined for each subject, and values for each of the predictor variables listed in Table 1 were recorded.

### *Data Analysis*

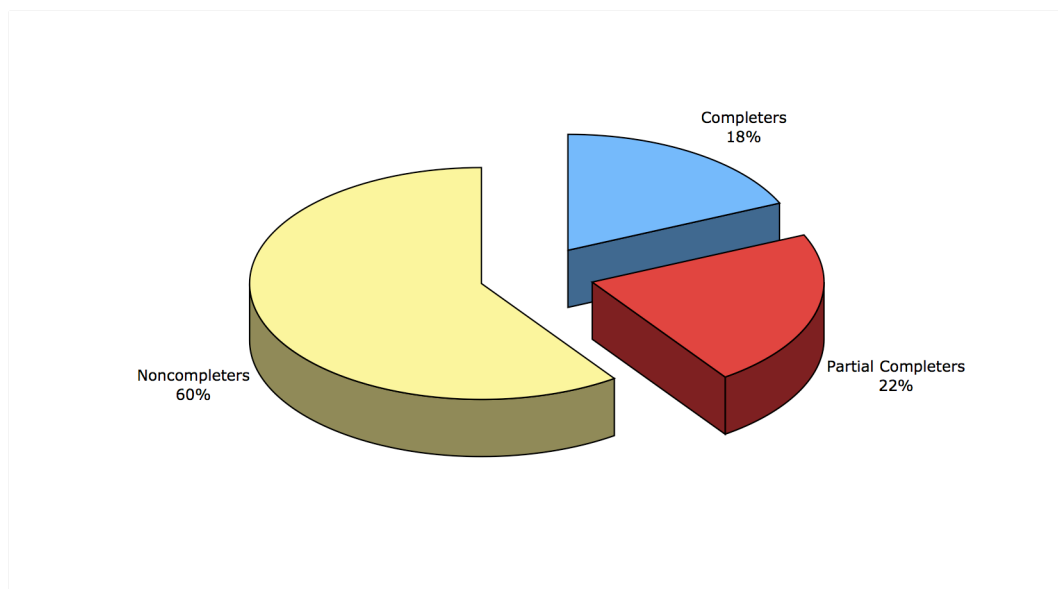
A three-group discriminant function analysis was used to determine the predictive utility of the 16 independent variables, that is, to assess the ability of the set of predictor variables to significantly differentiate between completers, partial completers, and non-completers in the honors program. The two ensuing functions were tested for statistical significance, and the significant one was interpreted based on the major predictors that comprised it. The original set of predictors was reduced to a smaller, more parsimonious set. In addition to significance tests, the discriminant functions were also evaluated using a *leave-one-out* procedure (Huberty, 1994, chap. 6; Lachenbruch, 1975, chap. 2). This technique classifies each subject based on a statistic derived from the remaining subjects. The percentage of correct classifications of the subjects into the three criterion groups then serves as a measure of the accuracy of the discriminant functions. Further analytic procedures included graphing the centroids for the three completion groups on the discriminant functions. This facilitated the interpretation of the differences between the groups, i.e., the factors that distinguish or separate the groups were further revealed by examining the centroid graphs.



## CHAPTER IV

### RESULTS

After five years, 62 of the 336 students who began college as active participants of the OSU Honors Program in the fall of 2000 had completed the Honors Degree requirements (18.45% completers), 73 of the students had completed only the General Honors Award (21.73% partial completers), and 201 had earned no honors awards (59.82% noncompleters). See Figure 2. The data analyses described in this chapter were designed to examine variables that might predict the categorical level of student persistence and completion in the honors program. The analyses were guided by four research questions: (1) Are there linear combinations of predictor variables that provide for the classification of individual students into honors completion groups at a rate that is a significant improvement over chance classification? (2) If so, what is the strength of the relationship between the set of predictors and the criterion? (3) Which of the variables, individually and in combination with other variables, contribute to the prediction of honors program completion? (4) How do the honors completion groups differ on the discriminating variables?



*Figure 2.* Honors award completion for new OSU freshmen entering Fall 2000.

First, the data were examined to assess accuracy and appropriate fit between their distributions and the assumptions of multivariate discriminant analysis. Second, preliminary screening analyses were performed to select the most viable set of predictor variables, and third, a discriminant analysis was carried out using this set. This chapter presents the results of these analyses.

### *Initial Examination of Data*

An initial examination of the data was conducted to assess accuracy, missing values, multicollinearity, fitness for meeting the assumptions of multivariate discriminant analysis, and the presence of outliers.

### *Missing Data*

The cumulative high school GPA variable (HSGPA) contained 19 missing values, however a “core course” high school GPA was available for these students. To verify the appropriateness of substituting the core GPA for the missing HSGPA, a bivariate Pearson correlation coefficient was calculated for a random sample of 30 students for whom both GPAs were available. A statistically significant correlation of .87 was obtained ( $p < .01$ ); therefore the core GPA was substituted for the 19 missing HSGPA values.

The measure for socioeconomic status (SES), family income, was available only for those students who had applied for financial aid. As a result, the 122 missing values constituted 36% of the sample, and the SES variable was not included in the discriminant analysis. Given the non-significant relationship of SES to the grouping variable (See Table 3), the potential of the SES variable to make a significant contribution to the discrimination between award groups was small.

For high school rank (HSRANK), missing data were distributed over the predictor and grouping variables in a manner that was generally proportional. For example, the 30 cases that were missing the HSRANK value were 60% non-completers, 17% partial completers, and 23% full completers, and the corresponding percentages for the entire data set were 60%, 22%, and 18%. Because of this roughly proportional dispersion, the deletion of cases with missing HSRANK was deemed appropriate. Unlike missing data values that are not proportionally dispersed, the pattern of missing data in this set should not pose a serious problem in the analysis (Tabachnick & Fidell, 2001).

Because of the small numbers in several of the categories of the race/ethnicity variable (RACE), this variable was divided into two groups: Caucasian (N = 300) and All Others (including Native American, N = 20; Asian, N = 7; African American, N = 2; Hispanic, N = 3; and Multiracial, N = 1). There were three missing values for this variable. The full useable data set for the discriminant analysis contained 306 cases after 30 cases with missing values were deleted.

### *Multicollinearity*

Collinearity diagnostics produced by SPSS (version 11.0.4) were examined, and no serious problems were detected with the data. The SPSS tolerance test also detected no problems with multicollinearity or singularity. This test performs a multiple regression for each independent variable on all of the other independent variables and provides for the identification of those with extremely large squared multiple correlation coefficients. The largest bivariate correlation between any two of the continuous independent variables occurred with HSRANK and HSGPA ( $r = .59$ ), which was not a correlation large enough to characterize the two variables as redundant. Tabachnick and Fidell (2001,

chap. 4) advise against including two variables with a bivariate correlation of .70 or more in the same analyses.

### *Assumptions*

The assumptions of multivariate discriminant analysis are (1) the observations are independent; (2) the observations follow a multivariate normal distribution; and (3) the variance-covariance matrices are equal for the groups (Stevens, 2002, chap. 6). The current data set satisfies the assumption of independence, because an individual's variable scores were not influenced by the scores of other individuals in the sample. It is not possible to verify all of the aspects of multivariate normality, so, in practice, investigations of univariate normality are ordinarily sufficient (Stevens, 2002, chap. 6). Frequency histograms were examined to assess univariate normality for each of the variables. The distributions for HSGPA, HSRANK, and CUMGPA appeared to be negatively skewed. To adjust for this departure from normality, logarithmic transformations were performed as suggested by Tabachnick and Fidell (2001, chap. 4) and the discriminant analysis was run with the transformed variables. The resulting analysis was not improved enough to justify the interpretational confusion that arose from using the transformed variables. Therefore, the original, non-transformed variables were used in the analysis. Box's M test to assess the homogeneity of the variance-covariance matrices was found to be significant, which suggested a violation of the variance-covariance homogeneity assumption. However, this test is extremely sensitive to nonnormality (Tabachnick & Fidell, 2001, chap. 11), so another method to assess homogeneity was also employed. Scatterplots of scores on the two discriminant functions were produced separately for each award group, and these plots were judged to be

roughly equal in overall size. This is evidence of an adequate level of homogeneity of the variance-covariance matrices (Tabachnick & Fidell, 2001, chap. 11).

### *Outliers*

Four potential outliers were identified in the discriminant analysis by examining cases with a relatively large squared Mahalanobis distance to the centroid. Individual inspection of the four cases revealed that these cases were all in the non-completer group. Two of the cases were students who withdrew from the university during their first semester of college, and the data reported 0.00 cumulative GPAs for these students. These two cases were removed from the data set. The other two potential outliers were retained in the model because they represented members of the population that informed the analysis in a useful way and were not judged to be a result of data entry errors.

### *Preliminary Screening Analyses*

Because of the large number of predictor variables in the original set (16), preliminary univariate screening analyses were performed to determine a more parsimonious set of viable discriminating variables. Table 1 (Chapter III) lists and describes the 16 predictor variables in the original set. A one-way analysis of variance (ANOVA) was conducted for each of the continuous (ratio, interval, or ordinal) predictor variables to assess differences in the means of each variable across the award groups. Results are shown in Table 3. Levene's test indicated homogeneity of variance for all of the variables except HSGPA, HSRANK, and CUMGPA. For these three variables, smaller variances were found in the smaller groups, resulting in a conservative F statistic (Stevens, 2002, chap. 6). In spite of the conservative nature of the F, significant group differences were found with these three variables. In addition, the F tests suggested

significant group differences for the ACT, COLHRS, and HONCRS variables. Omega squared ( $\omega^2$ ) was calculated to provide an estimate of effect size (Keppel, 1991, chap. 4). A large effect was found for CUMGPA ( $\omega^2 = .15$ ), according to Cohen's (1977, chap. 8) characterization of effect size. Small effects were found for HSGPA (.05), HSRANK (.04), ACT (.02), COLHRS (.02), and HONCRS (.02).

Each categorical variable was examined for group differences by using a Pearson chi-square ( $\chi^2$ ) test for independence. The tests indicated that the GENDER, COLLEGE, and HOUSING variables exhibited a significant relationship with the award group variable. Results are provided in Table 4. These univariate analyses partially address the fourth research question regarding how the honors completion groups differ.

Table 3

*Comparisons by Group for Continuous Predictor Variables*

Tinto's Component	Predictor	Non-completers (N = 201)		Partial completers (N = 73)		Completers (N = 62)		F	p
		M	SD	M	SD	M	SD		
Skills and abilities	HSGPA**	3.88	0.14	3.93	0.13	3.96	0.07	10.45	< .01
Skills and abilities	ACT*	29.09	2.00	29.93	2.34	29.31	2.35	4.06	.02
Skills and abilities	HSRANK**	92.16	8.00	94.72	6.47	96.05	4.99	7.56	< .01
Prior schooling	APCLEP	6.44	9.28	7.32	8.99	7.71	8.87	0.57	.57
Family and comm. background	SES <sup>a</sup>	\$66,058	\$35,278	\$76,700	\$44,610	\$69,196	\$32,351	1.38	.25
Family and comm. background	HSSIZE	280.57	231.10	270.58	219.66	249.44	222.92	0.45	.64
Univ. acad. perfor- mance/integration	CUMGPA**	3.34	0.66	3.77	0.25	3.84	0.22	31.24	< .01
Univ. acad. perfor- mance/integration	COLHRS*	14.50	2.62	15.07	2.08	15.50	2.68	4.19	.02



Initial university goals/commitments	CHOICE	2.12	1.56	2.18	1.58	1.98	1.54	0.27	.76
Honors program academic/social integration	HONCRS*	6.67	1.95	6.49	1.86	7.37	2.28	3.78	.02
Honors program academic/social integration	FACUSE	9.24	18.97	8.63	12.64	14.87	15.84	2.90	.06
Family background and/or initial university goals/commitments	ACPTDATE	8.16	2.05	8.27	2.10	8.27	1.96	0.13	.88

---

\*Group means were significantly different at  $\alpha = .05$ . \*\*Group means were significantly different at  $\alpha = .01$ . <sup>a</sup>SES was measured by family income.

Table 4

*Comparisons by Group for Categorical Predictor Variables*

Predictor (Tinto's Component)	Award group			$\chi^2$	p
	Non-completers (N = 201)	Partial completers (N = 73)	Completers (N = 62)		
GENDER** (Personal attributes)				12.14	< .01
Males (N = 142)	70.42%	17.61%	11.97%		
Females (N = 194)	52.06%	24.74%	23.20%		
RACE (Personal attributes)				0.01	.99
Caucasian (N = 300)	60.00%	21.33%	18.67%		
All others (N = 33)	60.61%	21.21%	18.18%		
COLLEGE* (Univ. acad./social integration)				21.51	.02
AG (N = 54)	50.00%	33.33%	16.67%		
AS (N = 133)	58.65%	18.05%	23.31%		
BU (N = 44)	52.27%	29.55%	18.18%		
ED (N = 14)	42.86%	28.57%	28.57%		
EN (N = 74)	78.38%	12.16%	9.46%		
HE (N = 17)	52.94%	29.41%	17.65%		

HOUSING**		20.65	< .01
(Honors program social integration and initial honors program commitments)			
Non-honors (N = 229)	68.12%	17.47%	14.41%
Honors (N = 107)	42.06%	30.84%	27.10%

\*Variables indicated a significant relationship with the award group variable at  $\alpha = .05$ .

\*\*Variables indicated a significant relationship with the award group variable at  $\alpha = .01$ .

### *The Discriminant Analysis*

To address the research questions, a three-group discriminant analysis was performed with SPSS DISCRIMINANT (version 11.0.4) using the nine statistically significant predictor (discriminating) variables that were identified in the preliminary univariate analyses:

HSGPA—High school grade point average

ACT—Composite ACT score

HSRANK—Percentage high school class rank (top rank = 100%)

CUMGPA—First-semester cumulative college grade point average

COLHRS—First-semester college credit hours earned

HONCRS—First-semester-credit-hour enrollment in honors courses

GENDER—Gender

COLLEGE—College of initial enrollment (Agriculture, Arts and Sciences,  
Business, Education, Engineering, or Human Environmental Sciences)

HOUSING—Initial housing assignment (honors or non-honors)

The criterion grouping variable was the honors program award completion level: (1) noncompleters—students who completed no honors awards; (2) partial completers—students who completed the General Honors Award only; and (3) completers—students who completed the Honors Program Degree. The sample size in the analysis ( $N = 304$ ) was large enough to accommodate the nine predictor variables, because this exceeds the 20-subjects-per-variable suggested minimum for discriminant analysis (Stevens, 2002, chap. 7).

As is standard practice in discriminant analysis, the unordered categorical variables that had two levels, GENDER (male and female) and HOUSING (honors housing or not) were coded using a binary (0 or 1) assignment (Huberty, Wisenbaker, Smith, & Smith, 1986; Krzanowski, 1980). Effect coding was used to represent the six levels of the COLLEGE variable. Equal group probabilities were used in the analysis, that is, the chance probability of classifying a case into each of the three groups was .33 regardless of the size of the group.

Because the COLLEGE variable was represented by five separate vectors, it was necessary to treat it differently than the other variables to enable interpretation of the contribution of the vectors as a set toward the overall classification process. In order to detect the influence of the COLLEGE vectors as a single set, two separate discriminant analyses were performed. The first analysis used all of the variables except COLLEGE (eight variables). Then a second analysis used the same eight variables plus the five COLLEGE vectors to see whether the addition of these vectors changed the classification results in a meaningful way.

The first discriminant analysis yielded one statistically significant discriminant function with a canonical correlation ( $R_c$ ) of .50 ( $R_c^2 = .25$ ; Wilk's lambda = .73;  $\chi^2 = 94.11$ ;  $df = 16$ ;  $p < .01$ ). The second discriminant function was not statistically significant and therefore is omitted from further discussion (Wilk's lambda = .97;  $\chi^2 = 9.82$ ;  $df = 7$ ;  $p = .20$ ). The hit rate for this analysis, the percentage of correctly classified cases in the sample (Stevens, 2002, chap. 7), was 54.28%. The hit rates for each award group and the classification results by groups are provided in Table 5. The effect size, as measured by the proportional reduction in error (Huberty, 1994, chap. 7), was .31, which indicated a 31% improvement over random assignment of cases to groups. As a more valid estimate of the hit rate, the leave-one-out procedure was used, where the classification of each case was based on functions derived by all cases other than that case (Huberty, 1994, chap. 6; Lachenbruch, 1975, chap. 2). This procedure produced a hit rate of 51.32%.

Table 5

*Classification Results*

Group	% correct	Number of cases classified into group			Total
		Non-completers	Partial completers	Completers	
Noncompleters	59.67%	108	37	36	181
Partial completers	38.24%	17	26	25	68
Completers	56.36%	9	15	31	55
Total	54.28%	134	78	92	N = 304

A subsequent discriminant analysis was performed using the five COLLEGE vectors in addition to the eight predictor variables used in the previous analysis. The purpose of this analysis was to compare it to the previous analysis to determine whether the addition of the COLLEGE vector made a sizeable difference in the results. After adding COLLEGE, the canonical correlation was .51, the hit rate was 53.62%, and the proportional reduction in error was 30%, compared with .50, 54.28%, and 31%, respectively, for the analysis without COLLEGE. Clearly the accuracy of award group membership prediction was not enhanced by the addition of the COLLEGE vectors.

The analysis thus far provides an affirmative answer to the first research question: Are there linear combinations of predictor variables that provide for the classification of individual students into honors completion groups at a rate that is a significant improvement over chance classification? A 31% improvement over chance classification was obtained. The analysis has also addressed the second research question, which focuses on the strength of the relationship between the set of predictors and the criterion. The canonical correlation between the discriminant function and award group membership was .50; the discriminant function was statistically significant ( $p < .01$ ); and the function classified 54.28% of the cases into the correct award group. The third question, concerning the identification of the variables that contribute to the prediction of honors program completion, is addressed by examining the structure coefficients and the standardized canonical coefficients. These coefficients are listed in Table 6. The variables with structure coefficients (loadings) in excess of .33 facilitate a substantive interpretation of the discriminant function (Tabachnick & Fidell, 2001, chap. 11). The variable with the largest structure loading (the most highly correlated with the

discriminant function) was CUMGPA. Other variables with loadings larger than .33 were HSGPA, HOUSING, HSRANK, and GENDER. These are the variables that exerted the strongest influence on the function's ability to separate the award groups. The relatively small, standardized canonical coefficients for HSGPA and HSRANK suggest the presence of redundancy in the model.

Table 6

*Discriminant Function Structure Coefficients and Standardized Canonical Coefficients*

Predictor	Structure coefficient	Standardized coefficient
CUMGPA	.83	.73
HSGPA	.43	.01
HOUSING	.40	.37
HSRANK	.39	.16
GENDER	.36	.33
COLHRS	.25	.19
ACT	.18	.02
HONCRS	.11	.14

The group centroids, the means of the discriminant function scores for the groups, are given in Table 7. They provide a measure of the separation of the groups on the discriminant function. An examination of the centroids, along with a substantive interpretation of the significant discriminant function, addresses the fourth research question: How are the honors completion groups different on the discriminating variables? This discussion is presented in Chapter V.

Table 7

*Group Centroids*

Award group	Group centroids
Noncompleters	-0.46
Partial completers	0.55
Completers	0.84

*Summary of Results*

From an original set of 16 variables related to Tinto's (1993) model of student departure, 8 were identified as the best potential contributors to a linear function that might predict the award completion group to which Fall 2000 honors program students belonged after five years: completers, partial completers, and noncompleters. The eight variables were identified by preliminary univariate screening analyses and discriminant analyses. The primary discriminant analysis of the study yielded one statistically significant discriminant function—a linear combination of the high school GPA, high school class rank, ACT score, first-semester college GPA, first-semester college credit hours earned, first-semester-credit-hour enrollment in honors courses, first-semester residence (honors or non-honors housing), and gender. This analysis correctly classified 54.28% the 304 students into award groups, which was a 31% improvement over chance classification as measured by the proportional reduction in error. The magnitude of the separation of the groups achieved by the discriminant function was demonstrated by the group centroids: - 0.46 for the noncompleters; 0.55 for the partial completers; and 0.84 for the completers. The largest structure coefficient corresponded to the first-semester



college GPA (.83). Other variables with loadings large enough to facilitate interpretation of the discriminant function corresponded to high school GPA (.43), housing (.40), high school class rank (.39), and gender (.36). The relatively small standardized canonical coefficients for high school GPA (.01) and high school class rank (.16) suggested the presence of redundancy in the function.

## CHAPTER V

### DISCUSSION AND CONCLUSIONS

### *Review of the Study*

Very little is known about completion rates in collegiate honors programs, and only a scarce amount of research has been conducted to identify predictors of persistence and completion in these programs. The present study explored the predictive relationship of 16 pre-entry and post-entry variables to completion in an honors program. These variables are described in Table 1 (Chapter III). Records of 336 Oklahoma State University students who were active participants as new freshmen in the honors program in the Fall 2000 semester were studied. After five years, all of these students had either completed the requirements for the Honors Degree (completers), had not earned the Honors Degree but had completed General Honors Award requirements (partial completers), or had ceased their honors program participation without earning any honors awards (noncompleters).

Both univariate and multivariate analyses were performed to address the research questions of the study:

1. Are there linear combinations of predictor variables that provide for the classification of individual students into honors completion groups at a rate that is a significant improvement over chance classification?
2. If so, what is the strength of the relationship between the set of predictors and the criterion?
3. Which of the variables, individually and in combination with other variables, contribute to the prediction of honors program completion?

4. How do the honors completion groups differ? The univariate analyses compared the means or frequencies of each predictor by honors award group in order to identify those variables that were significantly different across the groups.

The 9 variables that showed a statistically significant relationship with the award group variable were then used as predictor variables in the discriminant analysis. This analysis produced a statistically significant linear combination of variables that predicted award group membership at a rate that was significantly better than chance classification, yielding an effect size of .31. Detailed results of the study are provided in Chapter IV. In this chapter, these results are discussed within the context of the study setting, including comparisons to results from prior research. Also, conclusions are drawn, limitations are stated, and implications for practical application and future research are presented.

### *Discussion*

#### *Honors Program Completion Rate*

The completion rate for the Fall 2000 cohort of honors students was 18.45%, that is, 18.45% of the students who began their freshman year as active participants in the honors program completed the full requirements of the program and earned an Honors Degree. The students who were partial completers constituted 21.73%, earning the General Honors Award, and the remaining 59.82% were noncompleters. It is difficult to relate this completion rate to established norms because, in contrast to often-reported college graduation rates, published honors program completion rates are almost nonexistent. One recent study that does provide such data reported a combined honors degree completion rate of 27% for three honors programs in Pennsylvania (Cosgrove, 2004b).

To compare honors completion rates across institutions, several characteristics of the honors programs must be taken into consideration. For example, does the program use an extensive screening process to admit only a small, select number of students each year; or are admission policies relatively open, allowing the acceptance of a large number of students? Are scholarships dependent upon honors program participation? Scholarships that require continued honors participation provide a tangible incentive for students to persist in honors programs and complete award requirements. The number of credit hours required for honors degree completion, the minimum GPA needed, and whether or not a thesis is included in the honors degree requirements are other factors that affect honors completion rates.

The sample of honors program students in Cosgrove's (2004a, pp. 37-38) study had minimum SAT scores of 1150 and ranked in the top 20% of their high school classes, which is similar to the sample for the current study. Two of the three honors programs offered scholarships, the range of honors credit hours required for completion of an honors degree was 21-30, the minimum GPA required ranged from 3.25 to 3.33, and two of the three schools required an honors thesis (p. 61). The honors program for the present study admits a relatively large number of students (approximately 10% of the entering freshman class), requires a relatively large number of honors credit hours (39) for the honors degree, requires a 3.50 minimum GPA, and requires a thesis or creative component. No scholarship money is associated with honors program participation. This combination of the non-selective nature of admission, the rigorous curricular requirements, high minimum GPA, and the absence of scholarship incentives that are tied to honors participation help explain the low rate of completion.

### *Most Important Predictor Variables*

The set of predictor variables in this study were moderately successful in classifying the students into award groups, yielding a 31% proportional reduction in error over chance classification. To interpret the substantive meaning of the discriminant function, which is a linear combination of the eight best predictor variables, the correlations of each predictor variable with the function are examined. These correlations, the structure coefficients, are shown in Table 6 (Chapter IV). The following variables had structure loadings greater than .33: CUMGPA (.83); HSGPA (.43); HOUSING (.40); HSRANK (.39), and GENDER (.36). These are the primary variables that constitute the discriminant function and can be considered the most important set of predictors of honors award completion in the analysis. Using the terminology of Tinto's (1993) model, then, the discriminant function is primarily influenced by a combination of pre-entry skills and abilities (HSGPA and HSRANK), personal attributes (GENDER), experiences that are tied to honors program social integration (HOUSING), and early academic performance that leads to academic integration into the university (CUMGPA). The structure loading associated with CUMGPA, by far the largest of the set of correlations, suggests that the discriminant function is dominated by the cumulative grade point average after one semester of college. A discussion of each of the most important predictor variables follows.

#### *First-semester cumulative grade point average (CUMGPA).*

Early cumulative grade point averages have been shown to predict college persistence and completion in many studies (e.g., Astin, 1975, chap. 5; Cabrera et al., 1993; Pascarella et al., 1981), but little exploration of this variable is found in the body of

literature on honors degree completion. The honors completion literature primarily focuses on pre-entry variables rather than early college measures (McDonald & Gawkoski, 1979; Roufagalas, 1993, 1994).

The univariate ANOVA and post hoc analysis for the CUMGPA variable suggest that students in the noncompleter group finished their first semester of college with significantly lower GPAs than students in both the completer and partial completer groups. No statistically significant differences were found between the completers and the partial completers. In other words, based on these results, students who perform well academically during their first semester of college are more likely to complete honors awards than those who do not.

Upon initial inspection, this result is not surprising given the direct relationship between the first-semester GPA and OSU Honors Program eligibility requirements. The program prevents a student who earns less than a 2.75 GPA after the first semester from continuing honors work during subsequent semesters (unless the GPA later increases to 3.25 for freshmen and sophomores, 3.37 for juniors, or 3.50 for seniors). None of the students in the current sample with a first-semester GPA less than 2.75 completed honors awards. However, only 20 of the 181 noncompleters (11.05%) earned GPAs less than the minimum 2.75 honors program requirement, which suggests that most of the noncompleters do not fail to complete awards strictly because of becoming ineligible for honors work after their first semester of college. Some of the noncompleters may have become ineligible at a later time, however, by failing to meet the minimum GPA requirements of 3.25 for freshmen and sophomores, 3.37 for juniors, and 3.50 for seniors.

Apart from the connection of CUMGPA to honors program eligibility criteria, the findings of this study suggest that early college academic performance is a strong predictor of a student's decision or desire to undertake continued honors work. Honors work generally involves taking more challenging courses and doing more independent academic work than is required by non-honors classes. Students who perform well academically during their first semester of college gain a level of academic confidence that can serve as encouragement to continue to pursue the additional rigor of the honors curriculum.

What does CUMGPA reflect? Measures of academic performance are a composite of many contributing factors, such as skills, abilities, maturity, motivation, goals, priorities, and previous educational experiences. Low GPAs may be indicators of a voluntary decision not to invest the time and energy needed to excel in college, particularly for honors students who possess the skills needed to succeed academically (Tinto, 1993, chap. 4). If students are insufficiently committed to the institution or to the goal of education, then the goal of achieving honors award distinctions is secondary at best, and the likelihood that such students will meet the demands required to complete honors awards is slim. Even for students who initially perform well academically, the perceived value of the honors award distinctions may not be great enough to warrant the extra work.

*High school grade point average (HSGPA) and high school class rank (HSRANK).*

The inclusion of the HSGPA in the group of most important predictors of honors persistence and completion is in keeping with prior research (McDonald & Gawkoski,



1979; Roufagalas, 1993). The presence of the HSRANK in the group of key predictors supports Astin's (1975) finding that, in addition to HSGPA, HSRANK made an independent contribution to predicting college persistence. To understand these two similar high school performance variables in the context of the honors program that is the setting for the current study, a brief discussion is in order.

A weighted HSGPA of at least 3.75 and a minimum ACT composite score of 27 are required for initial honors program participation for new freshmen. The range of the HSGPA variable for the sample used in this study (3.17–4.00) reflects grades lower than this minimum, however, because the measure for HSGPA that was available from the institutional research office was an un-weighted GPA based on a scale with 4.00 as the maximum value. The mode for the HSGPA variable was 4.00, and 36.12% of the sample shared this value. For students who are concentrated at the high end of the high school performance spectrum, the HSRANK is a more discriminating variable than the HSGPA. The HSRANK provides information regarding a student's position relative to other students in his or her graduating class, taking weighted grade points for Advanced Placement courses into consideration. It is measured as a percentage, with 100% indicating that the student is first in his or her class. Therefore, students with 4.00 un-weighted GPAs who are considered equal on the HSGPA variable may not be considered equal using the HSRANK variable. The range of the HSRANK variable for the sample in the present study was 34%–100%.

Although the structure coefficients for HSGPA (.43) and HSRANK (.39) indicate that these pre-entry variables are substantially correlated with the discriminant function, their standardized canonical coefficients, .01 and .16, respectively, suggest an element of

redundancy. These partial coefficients, reported in Table 6 (Chapter IV), suggest that, when the other variables in the set are taken into consideration, the contribution of the HSGPA and HSRANK toward the discriminant function is small. The pattern of significant bivariate correlations between pairs of the three most important continuous predictor variables, shown Table 8, helps explain this redundancy. Because HSGPA and HSRANK are the most highly correlated ( $r = .59$ ), it is likely that the main source of redundancy suggested by the standardized coefficients lies with these two variables. It should be noted that, considering the honors-student nature of the sample, the restricted ranges of these variables may produce attenuated correlations when compared with the same variables in the general-college-student population.

Table 8

*Pearson Correlations for CUMGPA, HSGPA, and HSRANK*

Predictor	Predictor (n = 306)		
	CUMGPA	HSGPA	HSRANK
CUMGPA	—	.30**	.28**
HSGPA		—	.59**
HSRANK			—

\*\*  $p < .01$

*First-semester housing (HOUSING).*

From the results of this study, another important predictor of honors award completion is HOUSING, the variable that measures whether or not students lived in the honors program residence hall during their first semester of college. This variable showed a surprisingly strong correlation with the discriminant function (.40) and is second only to CUMGPA when standardized canonical loadings are compared (HOUSING standardized

canonical loading = .37). The policies of Oklahoma State University require freshmen to live in on-campus housing or in Greek housing, so the literature that relates on-campus housing with college persistence (e.g., Astin, 1975, chap. 5) applies equally to all students in the sample and does not assist with award group discrimination. DeCoster (1966) found that high-ability students who lived in close proximity with students of similar academic ability had a lower college withdrawal rate than similar students who lived elsewhere, but the lack of research focusing specifically on honors housing as a predictor of honors program completion provides no precedent for this result.

In the present study, 58% of the students who began college living in the honors residence hall completed an honors award, while only 32% of those who did not live in honors housing completed awards. The statistically significant univariate relationship between HOUSING and award group is shown in Table 4 (Chapter IV). These results suggest that the social reinforcement within the honors residential setting is related to students' decisions to complete honors award requirements. It is not evident from this study, however, whether it is the honors-housing environment that facilitates honors award completion or whether it is the students who are committed to honors participation who choose to live in honors housing. The HOUSING variable is an indicator of at least two components from Tinto's (1993) model: (1) An experience that relates to honors program social integration; and (2) Evidence of the initial level of commitment that a student has for honors program participation. A student's choice to live in honors housing is a commitment to the honors program, because students move in to honors housing with the understanding that they will need to relocate to another hall if their grades fall below

the honors program eligibility level or if they decide to terminate their honors program participation.

*Gender (GENDER).*

The final predictor of importance in interpreting the discriminant function is GENDER, with a structure loading of .36 and a standardized canonical correlation of .33, as shown in Table 6 (Chapter IV). The univariate analyses reported in Table 4 (Chapter IV) suggest not only that more females than males participate in the honors program (194 females; 142 males) but also that females complete honors award requirements at a significantly higher rate than males (47.94% of females and 29.58% of males completed an award). This finding follows prior findings that female honors students study significantly more than male honors students (Noldon & Sedlacek, 1998). Some studies in the general college student population have detected a positive correlation between retention and being female (e.g., Dey, 1990), but others detected no significant gender differences in retention and completion (e.g., Beecher & Fisher, 1999). The honors program at OSU attracts more females than males, and more females complete honors awards. The reasons for this gender difference are unknown and are deserving of further exploration.

*Other variables that demonstrated a significant relationship with award group.*

Three other predictor variables demonstrated a significant univariate relationship with the criterion and therefore were included in the discriminant analysis: first-semester college credit hours earned (COLHRS); composite ACT score (ACT); and the number of credit hours of honors course enrollment during the first semester (HONCRS). As shown

in Table 6 (Chapter IV), each of these variables has a structure loading smaller than .33, which indicates that they did not individually exert a strong influence on the discriminant function. The relatively small contribution of ACT compared to the HSGPA is in keeping with earlier research on honors program persistence (Campbell, 2005b; McDonald & Gawkoski, 1979). It is important to acknowledge that the ACT range for the current study is narrower than would be used in studies of general college student completion. The ACT range was 27–35 with a few exceptions between 24 and 26, inclusive, because of a provisional admission process.

Although the COLLEGE variable did not improve the classification hit rate when the vectors representing it were added separately to the discriminant analysis, the univariate analysis using the COLLEGE variable reveals significant differences among the colleges in honors award completion patterns, as shown in Table 4 (Chapter IV). Specifically, the results suggest that students from the College of Engineering complete honors awards at a lower rate than the other colleges. The results of this study, focusing on honors award completion, contradict studies of overall college persistence that identify Engineering students as being less likely to drop out of college than students in other academic areas (Astin, 1975; DesJardins et al., 2003). This suggests that, where field of study is concerned, honors program completion and general college completion are very different phenomena. Engineering students may be more likely than other majors to complete their undergraduate degrees, but, in the setting of the present study, they are much less likely to complete honors degrees. This may be due to the rigid curriculum in Engineering that allows very few elective courses, thus making the scheduling of honors courses difficult. It may also be due to the demanding nature of the Engineering courses,

which leave students with little additional time and energy to devote to honors work, particularly the individual contract projects that are required during the junior and senior years. A final possible explanation for the low honors award completion rate in the College of Engineering is that the honors program requires students to do honors work in a broad range of courses, including humanities and the social sciences. For at least some in the College of Engineering, these subject areas are considered less important than the mathematics, science, and engineering courses that dominate their degree plans.

#### *Variables That Were Not Important Predictors*

While the major interest in the results of the present study focuses on the most important predictor variables, it is also informative to mention the variables that have been omitted from the list—those that did *not* show a strong relationship with award group membership. These variables were the number of credit hours earned by AP or CLEP exams (APCLEP), socioeconomic status as measured by annual family income (SES), high school size (HSSIZE), the student ranking of OSU as a preferred college (CHOICE), race/ethnicity (RACE), the number of times that students used the honors program study lounge and computer lab during the first semester of college (FACUSE), and the number of months prior to the start of classes that the students were admitted to the university (ACPTDATE). These variables were not included in the discriminant analysis because preliminary univariate analyses showed little promise that they would make a difference in the classification of students into award groups.

#### *How the Award Completion Groups Differ*

The group centroids shown in Table 7 (Chapter IV) and illustrated in Figure 3 provide information regarding the separation of the award groups on the discriminant

function and the magnitude of the differences among the groups on the function. Not surprisingly, as measured by the centroids, the noncompleter group is farther from the completer group than it is from the partial completer group, and the partial completers and completers are closer to each other than to the noncompleters.

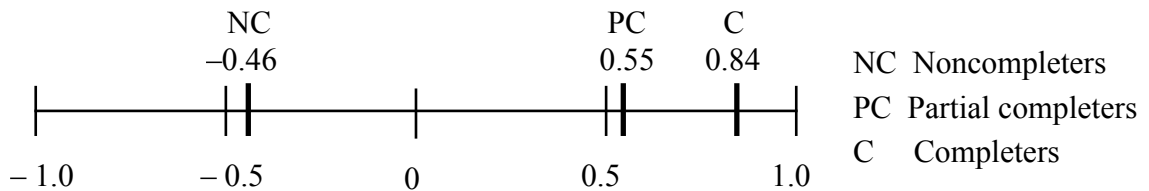


Figure 3. Graph of group centroids.

This suggests that the students who complete the General Honors Award and those who complete the Honors Degree are more similar to each other on the predictor variables than they are to those students who do not complete any honors awards. For example, the average first-semester cumulative GPA for the noncompleter group was 3.34, whereas the partial-completer average was 3.77 and the completer average was 3.84.

The discriminant analysis was most successful in separating the noncompleters from the other two groups. The results from interpreting the substantive nature of the discriminant function and examining the univariate analyses suggest that, when compared with both completers and partial completers, noncompleters can be characterized as having significantly lower cumulative first-semester GPAs, lower high school GPAs, and lower class ranks. They are also less likely to live in honors housing their first semester, and are more likely to be males.

The results of the present study do not provide much insight into variables that might distinguish partial completers from completers. In fact, the only predictor variable that demonstrated a statistically significant difference in univariate comparisons between

these two groups is the number of credit hours of honors courses taken during the first semester of enrollment. The mean for the completer group on this variable is 7.37 compared to 6.49 for the partial completers. The difference in the award requirements for the two groups mainly lies in the more independent work that is required to earn the honors degree, including an honors thesis or creative component. Variables that are missing from this study that would potentially help differentiate these two groups are measures of willingness to work independently on academic projects; measures of the need for or preference for social contact; the desire or ability to write, because the thesis usually has a large written component; and intentions to pursue a graduate degree, which may make the thesis requirement more directly applicable to future goals.

### *Conclusions*

This examination of student completion in a collegiate honors program contributes to the sparse body of research on this topic. Both univariate analyses and multivariate discriminant analyses were performed to determine the predictive utility of a set of 16 variables to differentiate between three groups of Oklahoma State University students who began college as active honors program participants in Fall 2000. The three groups were: (1) students who completed Honors Degree requirements (completers) (N = 62); (2) students who completed only General Honors Award requirements (partial completers) (N = 73); and (3) students who began college as honors program participants but did not complete any honors award requirements (noncompleters) (N = 201). The predictor variables have their theoretical base in Tinto's (1993) model of institutional departure and were selected based on the small body of literature focusing on honors



program persistence and completion and on the larger body of related literature focusing on general college persistence and completion.

A single, statistically significant discriminant function was found. The analysis correctly classified the sample of students into award groups with 54.28% accuracy, which produces a proportional reduction in error over chance classification of 31%. Therefore, the linear combination of eight of the predictor variables succeeded moderately well in predicting the level of award group completion for the sample of students. The variables of most prominence in the discriminant function are the first-semester cumulative GPA, high school GPA, high school class rank, first-semester residence—honors housing or non-honors housing, and gender. On this combination of variables, the partial completers and completers are more similar to each other than they are to the noncompleters. The findings suggest that, when compared with both completers and partial completers, noncompleters have significantly lower cumulative first-semester GPAs, lower high school GPAs, and lower class ranks. They are also less likely to live in honors housing their first semester and are more likely to be males. Although a student's decision whether or not to complete honors award requirements is a complex phenomenon that is not fully reflected in the variables of this study, the study findings expose a few important variables that, in combination, predict which students will persist with a moderate level of accuracy.

#### *Limitations*

The results of the present study are not widely generalizable, because the sample is composed of a single cohort of students from a single university honors program. Findings from this study should be tested by cross-validation with subsequent cohorts of

honors students before assuming that this single-year sample is representative of an extended, future population of OSU honors students. Although the current findings should be of interest to a wide range of collegiate honors programs, the direct applicability of these findings to programs at other institutions is limited by how similar the programs are to the OSU program. Honors programs vary widely in their size, admission criteria, course offerings, award requirements, support services, and student demographics.

The study is also limited by the kinds of predictor variables included in the analysis. The 16 variables that were included certainly do not represent all of the factors that influence whether or not students persist in their honors work. Missing from the study are variables that have been examined in other college or honors program persistence studies, such as educational aspirations (Pascarella et al., 1981), emotional intelligence (Edman & Edman, 2004), personality traits (Tinto, 1993, chap. 3), amount of informal faculty-student contact (Tinto, 1993, chap. 3), and student employment during college (Astin, 1975, chap. 4).

### *Theoretical Implications*

The basic theoretical foundation for the current study is Tinto's (1993) *theory of student departure*, which is illustrated in Figure 1, Chapter II. Tinto's theory concerns student departure from a university or college; it was not designed to predict or explain whether or not a student would drop out of an honors program before completing honors degree requirements. However, the application of Tinto's theory to the current study was supported by prior research (Feldman, 1992) and by similarities between the honors program and the university environments.

The results of the current study suggest moderate support for the application of portions of Tinto's (1993) model to the honors program setting. The 16 predictor variables that were grounded in Tinto's model succeeded moderately well in predicting honors award completion, but not all of the variables contributed significantly to the process. The most important predictors correspond to the following components of Tinto's model: university academic performance/integration (CUMGPA); pre-entry skills and abilities (HSGPA and HSRANK); honors program social integration and initial honors program goals/commitments (HOUSING); and personal attributes (GENDER). It should also be noted that the variables of this study do not constitute a complete representation of the components of Tinto's model.

#### *Practical Implications*

The basic problem that the present study was designed to address is the low completion rate in collegiate honors programs, specifically focusing on the program at Oklahoma State University. Several practical implications can be drawn from the findings of the present study that will assist the OSU honors program in the selection of students who are most likely to persist and in the support of these students as they progress toward honors degree completion. These implications may also be useful to honors program administrators at other institutions subject to the limitations presented in the previous section.

The first-semester cumulative GPA was the variable with the largest correlation to the function that separated the award groups. This finding suggests that academic performance during the first semester of college is the single most important predictor in the study of whether students who begin college in the honors program will persist to

honors degree completion. This implies that the first semester of college is a crucial time for faculty and advisors in the honors program to identify students who may be at risk for poor academic performance and to take proactive measures to assist these students with their difficulties. One measure that would provide such assistance is for the honors advisors to examine the mid-term grades of all honors students and arrange to counsel any at-risk students individually in order to help the students find tutoring assistance or to determine other action plans for improvement. Honors faculty should also be asked to report any students who initially perform poorly in their classes to the honors program so that intervention measures could be instigated by the honors advisors early in the semester.

The predictive importance of the first-semester GPA reinforces the current honors program practice of inviting students to enter the program at the end of their first semester when eligibility criteria no longer depend upon high school grades or ACT scores but are based solely upon a minimum first-semester-college GPA of 3.50. It is from this invitation process that the honors program gains most of its international students, students who did not meet the minimum ACT requirement, students who did not feel that the regular university courses were challenging enough, and students who needed confirmation of their ability to perform academically in college before attempting honors work. The results of the present study suggest that the students who enter the program based on high first-semester grades are more likely to finish honors awards than those who are admitted to the honors program based on pre-college-entry criteria. In fact, if high completion rates are the primary goal of honors program administrators, they may consider evaluating first-semester college performance before admitting any students to

the program. This proposal is not likely to be accepted, however, given the crucial role that honors programs serve in their university's recruitment of high-ability high school students.

If honors program participation did not begin until after the first semester, students would also miss an aspect of early integration into the honors program that emerged from the findings of the current study as an important predictor of honors persistence—living in honors housing. Honors housing is an optional aspect of honors program participation that is not currently valued as a crucial component of the program. However, the relatively strong contribution of the HOUSING variable to the discriminant function implies that honors housing facilities should be an honors program priority, and that new freshmen should be strongly encouraged to make the commitment to live in these facilities.

A final implication relates to initial honors program eligibility criteria. The study findings suggest that, in addition to the high school GPA, the high school class rank provides independent information that assists with the prediction of honors program persistence. Based on this finding, honors program administrators should consider using the high school class rank in addition to the current measures of high school GPA and ACT to determine initial eligibility for the program. Depending on the levels set for admission, this change may lead to the initial acceptance of fewer students but may also lead to greater honors program success and completion for those students who are accepted.

### *Implications for Future Research*

The present study assesses the power of a linear combination of pre- and post-entry variables to predict whether or not students will complete honors program award requirements. The research questions of the study were addressed, but other questions remain that provide an impetus for further research. First, will the results of the present study be duplicated with other samples and in other settings? The study should be cross-validated using subsequent cohorts at the same university to establish the consistency of results with different samples. Also, replications of the study should be performed in other institutional settings to determine if similar results are found with different types of honors programs and different student populations. Second, what variables missing from the present study would, if added, contribute more complete information toward the prediction of honors program completion? Incoming freshman honors students should be surveyed to measure potential predictor variables that were omitted from this study, such as academic motivation, need for achievement, and educational aspirations. For example, students who aspire to earn advanced degrees may be more likely than students who plan to terminate their education with a bachelor's degree to appreciate the value of doing an honors thesis, which is one of the requirements of the honors degree. Another interesting issue to explore through an incoming freshman survey would be whether the students initially participated in the honors program because of personal desire or because of parental influence.

Finally, what other research methods would provide an enriched understanding of the factors related to honors program completion? Additional studies that are qualitative in nature would enhance the realm of honors-completion research. For example, in-depth

interviews with students in the three award groups would provide a greater understanding of the factors that contributed toward their decision to complete honors awards or drop out of the program. Because the current study was more successful in distinguishing the noncompleters from the other two groups than it was in distinguishing the completers from the partial completers, qualitative methods would be particularly helpful in probing to uncover the factors that affect a student's decision to stop after the General Honors Award instead of persisting to full completion of the Honors Degree.

## REFERENCES

- Achterberg, C. (2005). What is an honors student? *Journal of the National Collegiate Honors Council*, 6(1), 75-83.
- Adelman, C. (1999). *Answers in the tool box: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: U.S. Department of Education.
- Allen, N. E. (2002). Factors that predict HBCU honors students' persistence and cumulative grade point average (Doctoral dissertation, Morgan State University, 2001). *Dissertation Abstracts International*, 63(5),1803.
- Anaya, G., & Cole, D. G. (2001). Latina/o student achievement: Exploring the influence of student-faculty interactions on college grades. *Journal of College Student Development*, 42(1), 3-14.
- Anderson, L. O. (1974). Small rural high schools and college completion. *Journal of College Student Personnel*, 15(3), 191-193.
- Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco: Josey-Bass.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25(4), 297-308.
- Austin, C. G. (1991). *Honors programs: Development, review, and revitalization*. Charleston, ILL: National Collegiate Honors Council.
- Basic characteristics of a fully-developed honors program. (2000). *National Honors Report*, 20(4), 42.



- Beecher, M., & Fischer, L. (1999). High school courses and scores as predictors of college success. *Journal of College Admission*, 163, 4-9.
- Best national universities. (2005, August 29). *U. S. News & World Report*, pp. 80-82.
- Braxton, J. M. (Ed.). (2000). *Reworking the student departure puzzle*. Nashville: Vanderbilt University Press.
- Braxton, J. M., & Lien, L. A. (2000). The viability of academic integration as a central construct in Tinto's interactionist theory of college student departure. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 11-28). Nashville: Vanderbilt University Press.
- Brown, E. B., Jr. (2001). Survey of criteria for admission into honors programs. *National Honors Report*, 22(1), 32-34.
- Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64(2), 123-139.
- Campbell, K. C. (2005a). Allocation of resources: Should honors programs take priority? *Journal of the National Collegiate Honors Council*, 6(1), 95-103.
- Campbell, K. C. (2005b, October). *Exploring Predictors of Persistence in Honors*. Paper presented at the annual conference of the National Collegiate Honors Council, St. Louis, MO.
- Carnegie Foundation for the Advancement of Teaching. (2001). *The Carnegie classification of institutions of higher education* (2000 ed.). Melno Park, CA: Author.

- Cashen, V. M. (1970). High school size as a factor in college academic success. *Journal of Secondary Education*, 45(6), 256-259.
- Castro-Johnson, M., & Wang, A. Y. (2003). Emotional intelligence and academic performance of college honors and non-honors freshmen. *Journal of the National Collegiate Honors Council*, 4(2), 105-114.
- Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.
- Cosgrove, J. R. (2004a). The impact of honors programs on undergraduate academic performance, retention, and graduation. (Doctoral dissertation, Pennsylvania State University, 2005). *Dissertation Abstracts International*, 65(7), 2511. (AAT No. 3140004)
- Cosgrove, J. R. (2004b). The impact of honors programs on undergraduate academic performance, retention, and graduation. *Journal of the National Collegiate Honors Council*, 5(2), 45-53.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage Publications.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: Sage Publications.
- DeCoster, D. A. (1966). Housing assignments for high ability students. *Journal of College Student Personnel*, 7, 19-22.
- DesJardins, S. L., Kim, D., & Rzonca, C. S. (2003). A nested analysis of factors affecting bachelor's degree completion. *Journal of College Student Retention*, 4(4), 407-435.

- Dey, E. L. (1990, April). *Evaluating college student retention: Comparative national data from the 1981-1984 entering freshman classes*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA. (ERIC Document Reproduction Service No. ED319320)
- Digby, J. (Ed.). (2002). *Honors programs and colleges* (3rd ed.). Lawrenceville, NJ: Thomson-Peterson's.
- Edington, E. D. (1981). *ACT scores of incoming freshmen to New Mexico State University by high school size* (Report No. RC015874). Las Cruces, NM: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED272354)
- Edman, L. R. O., & Edman, S. O. (2004). Emotional intelligence and the honors student. *Journal of the National Collegiate Honors Council*, 5(2), 15-24.
- Feldman, E. R. (1992). Involuntary attrition from a program for talented undergraduate students: Some implications for Tinto's model. (Doctoral dissertation, State University of New York at Buffalo, 1991). *Dissertation Abstracts International*, 52(7), 2424.
- Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications* (8<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice Hall.
- Gerrity, D. A., Lawrence, J. F., & Sedlacek, W. E. (1993). Honors and nonhonors freshmen: Demographics, attitudes, interests, and behaviors. *Journal of the National Academic Advising Association*, 13(1), 43-52.
- Gibbs, G., & Lucas, L. (1996). Class size and student performance: 1984-94. *Studies in Higher Education*, 21(3), 1996.

- Hickson, R. H., & Driskill, J. C. (1970). Needs for achievement: Differences between honors and non-honors students. *Journal of Experimental Education*, 38(3), 37-38.
- Huberty, C. J. (1994). *Applied discriminant analysis*. New York: John Wiley & Sons.
- Huberty, C. J., Wisenbaker, J. M., Smith, J. D., & Smith J. C. (1986). Using categorical variables in discriminant analysis. *Multivariate Behavioral Research*, 21(4), 479-496.
- Hutchison, J. E., & Johnson, A. E., Jr. (1980). Identifying persisters, voluntary withdrawers and academic dropouts at a liberal arts college. *NASPA Journal*, 18(2), 41-45.
- Keppel, G. (1991). *Design and analysis: A researcher's handbook* (3<sup>rd</sup> ed.). Upper Saddle River, NJ: Prentice Hall.
- Krosteng, M. V. (1992). Predicting persistence from the student adaptation to college questionnaire: Early warning or siren song? *Research in Higher Education*, 33(1), 99-111.
- Krzanowski, W. J. (1980). Mixtures of continuous and categorical variables in discriminant analysis. *Biometrics*, 36(3), 493-499.
- Lachenbruch, P. A. (1975). *Discriminant analysis*. New York: Hafner Press.
- Lucas, J. A., Hull, E., & Brantley, F. (1995). *Follow-up study of students taking honors courses, 1990-1995*, 24(10). Palatine, IL: William Rainey Harper College Office of Planning and Research. (ERIC Document Reproduction Service No. ED397904)

- Mathiasen, R. E. (1985). Characteristics of the college honors student. *Journal of College Student Personnel*, 26(2), 171-173.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications* (pp. 3-31). New York: HarperCollins (BasicBooks).
- McDonald, R. T., & Gawkoski, R. S. (1979). Predictive value of SAT scores and high school achievement for success in a college honors program. *Educational and Psychological Measurement*, 39(2), 411-414.
- National Collegiate Honors Council. (2004, December). *Members*. Retrieved April 16, 2005, from [http://www.nchchonors.org/nchc\\_members.htm](http://www.nchchonors.org/nchc_members.htm)
- Noldon, D., & Sedlacek, W. E. (1998). Gender differences in attitudes, skills, and behaviors among academically talented university freshmen. *Roepers Review*, 21(2), 106-109.
- Oklahoma State University Honors College 2003-2004 Annual Report*. (2004, August 16). Stillwater, OK: Author.
- Oklahoma State University Honors College 2004-2005 Annual Report*. (2005, August 15). Stillwater, OK: Author.
- Oklahoma State University, Stillwater, OK, Office of Institutional Research and Information Management. (2000, Fall). *OSU Student Profile, Fall 2000*. Retrieved October 10, 2005, from <http://vpaf.okstate.edu/IRIM/StudentProfileHome.html>
- Ory, J. C., & Braskamp, L. A. (1988). Involvement and growth of students in three academic programs. *Research in Higher Education*, 28(2), 116-129.

- Page, R. M., & Hammermeister, J. (1996). The relationship between high school size and dimensions of well-being in college students. *Education*, 116(3), 437-439.
- Palmer, A. B., & Wohl, J. (1972). Some personality characteristics of honors students. *College Student Journal*, 6(2), 106-111.
- Pantages, T. J., & Creedon, C. F. (1978). Studies of college attrition: 1950-1975. *Review of Educational Research*, 48(1), 49-101.
- 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., Duby, P. B., Miller, V. A., & Rasher, S. P. (1981). Preenrollment variables and academic performance as predictors of freshman year persistence, early withdrawal, and stopout behavior in an urban, nonresidential university. *Research in Higher Education*, 15(4), 329-349.
- Pflaum, S. W., Pascarella, E. T., & Duby, P. (1985). The effects of honors college participation on academic performance during the freshman year. *Journal of College Student Personnel*, 26(5), 414-419.
- Phillips, G. (2004). The role of community college honors programs in reducing transfer shock. *Journal of the National Collegiate Honors Council*, 5(1), 97-104.
- Rinn, A. N. (2004). Academic and social effects of living in honors residence halls. *Journal of the National Collegiate Honors Council*, 5(2), 67-79.
- Roufagalas, J. (1993). Tracking potential honors students. *National Honors Report*, 14(1), 25-31.

- Roufagalas, J. (1994). Tracking potential honors students: Some further results. *National Honors Report*, 14(4), 20-27.
- Scheck, C. L., & Kinicki, A. J. (1994). The effect of class size on student performance: Development and assessment of a process model. *Journal of Education for Business*, 70(2), 104-111.
- Schmitz, C. C. (1993). Assessing the validity of higher education indicators. *Journal of Higher Education*, 64(5), 503-521.
- Shushok, F. X., Jr. (2002). Educating the best and the brightest: Collegiate honors programs and the intellectual, social and psychological development of students (Doctoral dissertation, University of Maryland College Park, 2002). *Digital Dissertations*, AAT 3070562.
- Smith, W. R., Edminster, J. H., & Sullivan, K. M. (2001). Factors influencing graduation rates at Mississippi's public universities. *College and University*, 76(3), 11-16.
- St. Cloud State University, St. Cloud, MN, Office of Institutional Research. (2002, Summer). *2002 program completion rate report*. Retrieved October 19, 2002, from the St. Cloud State University web site:  
<http://irp.stcloudstate.edu/reports/historical/completion.html>
- Stephens, J., & Eison, J. A. (1986-87). A comparative investigation of honors and non-honors students. *Forum for Honors*, 17(1-2), 17-25.
- Stevens, J. (2002). *Applied multivariate statistics for the social sciences* (4<sup>th</sup> ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4<sup>th</sup> ed.). Boston: Allyn and Bacon.

- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2<sup>nd</sup> ed.). Chicago: University of Chicago Press.
- Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. *Review of Higher Education*, 21(2), 167-177.
- Tsui, L. (1999). Courses and instruction affecting critical thinking. *Research in Higher Education*, 40(2), 185-200.
- Turner, A. L., & Berry, T. R. (2000). Counseling center contributions to student retention and graduation: A longitudinal assessment. *Journal of College Student Development*, 41(6), 627-636.
- Volkwein, J. F., & Cabrera, A. F. (1998). *Student measures associated with favorable experiences*. New York: Association for Institutional Research 1998 Annual Forum paper. (ERIC Document Reproduction Service No. ED422809)



APPENDIX A

OSU Honors Program Fact Sheet 2000-2001

# THE UNIVERSITY HONORS PROGRAM

2000  
2001



**T**he University Honors Program at OSU provides many opportunities and challenges for outstanding undergraduate students. Special honors sections of general education courses, interdisciplinary honors courses, topical honors seminars, and special honors projects enable students to enhance their learning experiences.

## ADVANTAGES OF THE HONORS PROGRAM

Why would you want to participate in the University Honors Program? According to successful honors students, there are several advantages:

### SMALL CLASS SIZE

Classes are typically 20-22 students, and individually-tailored honors tutorial courses are often available.

### WIDE RANGE OF HONORS COURSES

A variety of honors courses are offered—usually thirty to forty courses each fall and spring semester.

### TOP TEACHING FACULTY

The faculty who teach honors courses are experienced members of the OSU teaching faculty, known for excellence in the classroom as well as in their academic fields. These professors especially enjoy working with the top students here at OSU.

### A SENSE OF COMMUNITY

Frequent interaction with other honors students and faculty helps you build a "feeling of belonging."

### SPECIAL HONORS ADVISING

Honors advisors in the University Honors Program Office provide you with personalized attention to your needs and interests. All of the advisors have earned honors degrees here at OSU or elsewhere, so they have personal experience not only as honors advisors, but as honors students as well.

### SPECIAL HONORS EVENTS

Enjoy picnics, lectures, special presentations, field trips, etc. (Special events are also scheduled for those living in Parker Honors Hall.)

*Because of the small size of my honors classes, I developed friendships with a diverse group of students in a supportive environment. This network of honors students, faculty and advisors has been a key to my success at OSU!*

*Zorr Parkison  
Business Major*



## FRINGE BENEFITS

- Use of the Honors Study Lounge and computer lab located on the fifth floor of the Edson Law Library
- Priority enrollment
- Extended library check-out privileges equivalent to the privileges extended to graduate students
- The option to live in Parker Honors Hall

## PARKER HONORS HALL

Active members in the Honors Program have the option to live with other honors students in Parker Honors Hall. Centrally located, Parker Hall is a good facility (two floors house women and two floors house men). (Visitation rules are the same at Parker Honors Hall as in any other residence hall housing freshmen.)

## PARKER ADVANTAGES

- Honors-experienced Parker staff can provide valuable insight into study techniques, honors classes and professors, and campus life at OSU. (*All Resident Assistants are active honors students.*)
- Honors seminars taught in Parker Honors Hall
- Enhanced study environment
- Special honors hall events

You can also participate in all the other activities available to students in the Residence Halls—including intramural sports and social activities.

*Space is limited, so send in your residence Hall application early. Be sure to complete both sides of the application.*

*Note: A discount of 10% on residence hall room and board is available for sophomores and above who contract for tea meals or more per week.*

## BENEFITS ARE FOR ACTIVE PARTICIPANTS

You are eligible to receive all of the benefits and fringe benefits available to University Honors Program students as long as you remain an "ACTIVE" participant. Freshmen and sophomore "active" participants undertake at least six credit hours of honors work each semester and twelve credit hours of honors work each two consecutive semesters. Juniors and seniors are "active" with three honors credit hours per semester.

Osaka State University is compliant with Title IX and Title VI of the Civil Rights Act of 1964. This Act of Congress prohibits discrimination on the basis of race, color, sex, religion, or national origin in any program or activity. This includes but is not limited to admission, employment, financial aid, and educational services. The university complies with Title IX and Title VI by providing equal opportunities for students and employees. The university complies with Title IX and Title VI by providing equal opportunities for students and employees. The university complies with Title IX and Title VI by providing equal opportunities for students and employees.

## ELIGIBILITY

### REQUIREMENTS FOR NEW FRESHMEN

- ACT composite score of 27 or higher (SAT 1200 or higher) with a high school GPA of 3.75 or higher. (Weighted high school grade point averages that are certified by high schools may be used.)

### CONTINUED ELIGIBILITY FOR HONORS & TRANSFER STUDENTS

- fewer than 60 credit hours  
3.25 OSU and cumulative grade point averages
- 60-83 credit hours  
3.37 OSU and cumulative grade point averages
- 84 or more credit hours  
3.50 OSU and cumulative grade point averages

New freshmen must earn at least a 2.75 grade point average for their first semester.

### TRANSFER HONORS CREDIT

Students may use up to 15 honors credit hours from other colleges and universities toward the requirements for the General Honors Award.

### OTHER SPECIAL OPPORTUNITIES

Through the University Honors Program you can enhance your education with special opportunities such as:

### HONORS TUTORIAL COURSES

In some cases you may want to learn more about a particular topic by going into more detail, doing research, or conducting experiments. You may even wish to study a topic in which the University doesn't offer a course. In these instances you may choose to work with a faculty member on a one-on-one basis in developing a course specifically designed to meet your needs and interests. (Special permission from the Director of the University Honors Program is required.)

### HONORS CONTRACTS

Honors contracts are a way to earn honors credit for a course in which an honors section is not available. You work with a faculty member on a special assignment or project which is beyond what is required in the regular content of the course. Upon completion of the contract and a course grade of "A" or "B" you receive honors credit for that course. (The honors designation on your transcript will not appear until the following semester.)

### HONORS THESIS OR CREATIVE COMPONENT

One of the requirements for the Honors Program Degree is a senior honors thesis or creative component. You may choose the faculty members

with whom you wish to work on this project, and you may choose your topic. Normally, you will choose a topic in your major field and work with professors from that department. This is an opportunity for you to really explore an area of interest in the depth and detail that you would not be able to in a regular course on campus. Be creative and enjoy a wonderful educational experience! (Topic approval from the supervising professor is required.)

### AWARDS

The University Honors Program offers three distinct awards: the General Honors Award; the College or Departmental Honors Award; and the Honors Program Degree. All three awards usually fit within the courses required for a particular degree and normally do not add additional credit hour requirements beyond those needed for the degree.

### THE GENERAL HONORS AWARD

This award is earned while completing your general education requirements.

### GENERAL HONORS AWARD REQUIREMENTS

(21 honors credit hours with grades of "A" or "B" with cumulative GPA and OSU GPA of 3.50, as specified below.)

#### A. TWELVE HONORS HOURS BREADTH REQUIREMENT

(Minimum of three honors hours per area from four of the following areas)

1. English (composition and technical-writing courses), Foreign Languages, and Speech Communication
2. Humanities (courses designated "H," except Foreign Language courses)
3. Mathematics, Statistics, Computer Science, and Management Science and Information Systems courses
4. Natural Sciences (courses designated "N")
5. Social Sciences (POLS 1113, HIST 1103, JB 1393, and courses designated "S," except Speech courses)
6. Other courses with honors credit (which are not included in areas 1 through 5, above)

#### B. TWO HONORS SEMINARS OR INTERDISCIPLINARY HONORS COURSES WITH A MINIMUM OF FOUR HOURS

(which also may be used to satisfy a portion of the breadth requirement) — courses with HONOR prefix and other courses designated as honors seminars

#### C. ADDITIONAL HONORS HOURS TO REACH TOTAL OF 21 HONORS HOURS

(with grades of "A" or "B" in all 21 honors hours plus cumulative and OSU GPA of 3.50), with no

more than 9 of the 21 honors hours by honors contract without special permission of the Director of the University Honors Program. [Transfer students are limited to 15 transfer honors credit hours toward the General Honors Award and must earn a minimum of 6 OSU honors hours in honors sections, honors seminars, or honors interdisciplinary courses — not by contract.]

### THE COLLEGE OR DEPARTMENTAL HONORS AWARD

This award is earned in your major field.

### COLLEGE OR DEPARTMENTAL HONORS AWARD REQUIREMENTS

Minimum of 12 upper-division honors credit hours with grade of "A" or "B" including a thesis or creative component, plus any additional departmental or college requirements (admission and retention standards set by academic college), with cumulative and OSU GPA of at least 3.50 at time of award. [For honors awards in two majors, honors requirements for both majors — including a creative component in each — must be completed, with at least 6 upper-division honors hours beyond the first major.] There is no limitation on number of hours completed by honors contract, except in the College of Business Administration.

### THE HONORS PROGRAM DEGREE

This award is earned by completion of both the General Honors Award and the College or Departmental Honors Award with a minimum of 39 honors credit hours with grades of "A" or "B" and both an OSU and a cumulative grade point average of 3.50 at the time of graduation. The Honors Program Degree is reflected on your transcript, and a special honors diploma is awarded.

The requirements for the General Honors Award and the College or Departmental Honors Award complete 33 of the required 39 honors credit hours for the Honors Program Degree. It is up to you how you earn the remaining 6 honors credit hours.

### FOR FURTHER INFORMATION

Call or write: *Cakate Campbell*  
University Honors Program • 510 Edmon Low Library  
Substack, OK 74778-3773 • (405) 744-8793  
<http://www.okstate.edu/honors>

### OTHER IMPORTANT NUMBERS

Residential Life	High School and
(405) 744-5992	College Relations
Scholarships and	(405) 744-5358
Financial Aid	(800) 253-5015 In-state
General Information	(800) 892-1255 Out-of-state
(405) 744-6694	
Scholarship Information	Registrar and
(405) 744-7541	Admissions Office
	(405) 744-5995
	(800) 253-5015 In-state

APPENDIX B

Institutional Review Board Approval

**Oklahoma State University Institutional Review Board**

Date: Wednesday, December 14, 2005  
IRB Application No ED0662  
Proposal Title: An Examination of Student Completion in a Collegiate Honors Program

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 12/13/2006

Principal Investigator(s)

K. Celeste Campbell  
510 Library  
Stillwater, OK 74078

Dale Fuqua  
204 Willard  
Stillwater, OK 74078

---

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

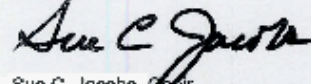
The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,



Sue C. Jacobs, Chair  
Institutional Review Board

## VITA

Kay Celeste Campbell

Candidate for the Degree of

Doctor of Philosophy

Thesis: AN EXAMINATION OF STUDENT COMPLETION IN A COLLEGIATE HONORS PROGRAM

Major Field: Educational Psychology

Biographical:

Education: Graduated from Burlington High School, Burlington, Oklahoma, in May 1975; received Bachelor of Science degree with honors in Mathematics and Master of Science degree in Applied Mathematics from Oklahoma State University, Stillwater, Oklahoma, in May 1979 and May 1987, respectively. Completed the requirements for the Doctor of Philosophy degree in Educational Psychology: Research, Evaluation, Measurement, and Statistics in May 2006.

Experience: High school mathematics teacher, Richardson Independent School District, Richardson, Texas, 1979-1982; High school mathematics teacher, Warner Public Schools, Warner, Oklahoma, 1982-1983; Graduate research assistant, AIM Project, Oklahoma State University, 1985-1987; Administrative/Teaching assistant, "Precalculus by Satellite," Oklahoma State University, 1987-1988; Middle school mathematics teacher, Bryan Independent School District, Bryan, Texas, 1988-1989; High school mathematics teacher (part-time), Stillwater Public Schools, Stillwater, Oklahoma, 1989-1990; Project associate for NSF grant (DIRECT mathematics project), Oklahoma State University, 1989-1990; Manager of course development and marketing/Instructional developer, Independent and Correspondence Study, Oklahoma State University, 1990-1994; Assistant director, Honors College, Oklahoma State University, 1995-present.

Professional Memberships: National Collegiate Honors Council

Name: Kay Celeste Campbell

Date of Degree: May, 2006

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: AN EXAMINATION OF STUDENT COMPLETION IN A  
COLLEGIATE HONORS PROGRAM

Pages in Study: 101

Candidate for the Degree of Doctor of Philosophy

Major Field: Educational Psychology

Scope and Method of Study: Although student persistence in college is a heavily researched topic, persistence and completion in collegiate honors programs has received very little research attention. The purpose of this study was to identify variables that predicted completion in a collegiate honors program, to evaluate the relative predictive importance of these variables, and to use these variables to describe how the completion groups differed. The subjects of the study were 336 Oklahoma State University freshman honors program participants in Fall 2000. After five years, the subjects were classified into three completion groups: (1) completers—those who completed the Honors Program Degree, requiring 39 honors credit hours (N = 62); (2) partial completers—those who completed the General Honors Award, requiring 21 honors credit hours (N = 73); and (3) noncompleters—those who completed no honors awards (N = 201). Preliminary univariate analyses were performed using an initial set of 16 pre- and post-college-entry predictor variables that were grounded in Tinto's (1993) longitudinal model of institutional departure. Subsequent multivariate predictive discriminant analyses were performed using the nine variables that showed a significant univariate relationship with the criterion grouping variable: high school GPA; ACT score; high school class rank; first-semester college GPA; first-semester college credit hours earned; first-semester-credit-hour enrollment in honors courses; gender; field of study (college of initial enrollment); and initial residence (honors residence hall or other housing).

Findings and Conclusions: The discriminant analysis produced one statistically significant discriminant function ( $R_c = .50$ ; Wilk's lambda = .73;  $\chi^2 = 94.11$ ;  $df = 16$ ;  $p < .01$ ). The set of variables predicted the level of honors award completion moderately well, classifying 54.28% of the students into the correct completion group (a 31% improvement over random assignment as measured by the proportional reduction in error). The findings suggest that, when compared with both completers and partial completers, noncompleters had significantly lower cumulative first-semester GPAs, lower high school GPAs, and lower class ranks. They were also less likely to live in honors housing their first semester and were more likely to be males. Theoretical and practical implications are discussed, as well as implications for future research.

ADVISOR'S APPROVAL: Dr. Dale R. Fuqua

---