

---

Theses and Dissertations

---

Spring 2011

# The effects of the first year of college on undergraduates' development of altruistic and socially responsible behavior

Ryan David Padgett  
*University of Iowa*

Copyright 2011 Ryan David Padgett

This dissertation is available at Iowa Research Online: <http://ir.uiowa.edu/etd/1052>

---

## Recommended Citation

Padgett, Ryan David. "The effects of the first year of college on undergraduates' development of altruistic and socially responsible behavior." PhD (Doctor of Philosophy) thesis, University of Iowa, 2011.  
<http://ir.uiowa.edu/etd/1052>.

---

Follow this and additional works at: <http://ir.uiowa.edu/etd>



Part of the [Educational Administration and Supervision Commons](#)

THE EFFECTS OF THE FIRST YEAR OF COLLEGE ON  
UNDERGRADUATES' DEVELOPMENT OF ALTRUISTIC  
AND SOCIALLY RESPONSIBLE BEHAVIOR

by

Ryan David Padgett

An Abstract

Of a thesis submitted in partial fulfillment of the  
requirements for the Doctor of Philosophy degree in  
Educational Policy and Leadership Studies (Higher Education)  
in the Graduate College of The University of Iowa

May 2011

Thesis Supervisors: Professor Michael Paulsen  
Professor Ernest Pascarella

The present study examines the effects of first-year college experiences on undergraduate students' development of altruistic and socially responsible behavior – a critical college outcome that leads to significant public or external benefits and support. Furthermore, this study examines whether the effects of first-year college experiences on altruistic and socially responsible behavior vary between first-generation and non-first-generation students. To guide the study's investigation, human, social, and cultural capital theory are used as conceptual frameworks and college impact models – including Astin's Input-Environment-Outcome model, Pascarella's General Model for Assessing Change model, and Weidman's model of undergraduate socialization – serve as a theoretical guide. Using longitudinal, pretest-posttest data from the Wabash National Study of Liberal Arts Education, ordinary least squares regressions are utilized to estimate the effects of the college experience on first-year students' altruism and social responsibility. Findings from these analyses suggest that a number of first-year college experiences and participation in vetted good practices significantly contribute to undergraduates' development of altruistic and socially responsible behavior.

Abstract Approved:

---

Thesis Supervisor

---

Title and Department

---

Date

---

Thesis Supervisor

---

Title and Department

---

Date

THE EFFECTS OF THE FIRST YEAR OF COLLEGE ON  
UNDERGRADUATES' DEVELOPMENT OF ALTRUISTIC  
AND SOCIALLY RESPONSIBLE BEHAVIOR

by

Ryan David Padgett

A thesis submitted in partial fulfillment of the  
requirements for the Doctor of Philosophy degree in  
Educational Policy and Leadership Studies (Higher Education)  
in the Graduate College of The University of Iowa

May 2011

Thesis Supervisors: Professor Michael Paulsen  
Professor Ernest Pascarella

Graduate College  
The University of Iowa  
Iowa City, Iowa

CERTIFICATE OF APPROVAL

---

PH.D. THESIS

---

This is to certify that the Ph. D. thesis of

Ryan David Padgett

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Educational Policy and Leadership Studies (Higher Education) at the May 2011 graduation.

Thesis Committee:

\_\_\_\_\_  
Michael Paulsen, Thesis Supervisor

\_\_\_\_\_  
Ernest Pascarella, Thesis Supervisor

\_\_\_\_\_  
Mary Noonan

\_\_\_\_\_  
David Bills

\_\_\_\_\_  
Paul Umbach

To my father and mother, wife, and children.

## ACKNOWLEDGMENTS

Above all else, I must acknowledge and thank my father and mother for their unrelenting support of my pursuit in education and life. I am eternally blessed to have been the recipient of such love and care. To my wonderful wife, for her undying patience, continued support, and unparalleled love; everything that I have and accomplished is equally yours. To my children; it continues to be your joyous screams of “Daddy” when I walk through the door that make all that I do possible and fulfilling. Your father and mother love you more than words can express.

I would not be where I am today without the continued support, mentorship, and kindness of Paul Umbach, Michael Paulsen, and Ernest Pascarella. I cannot thank each of you enough for your ongoing support and friendship. I also have endless thanks to Jennifer Keup, the National Survey of Student Engagement staff, the Center for Research on Undergraduate Education staff, my graduate cohort at The University of Iowa, the National Resource Center for The First-Year Experience and Students in Transition staff, and all who I have befriended along this productive and rewarding journey.

I would like to thank my dissertation committee, who dedicated their valuable time providing feedback, comments, and most importantly, their support. Each of you had an integral part in my graduate career and I thank you for your inspiration and dedication.

Lastly, I would like to acknowledge and thank Charles Blaich and the Center of Inquiry in the Liberal Arts at Wabash College. This research was supported by a generous grant from the Center of Inquiry in the Liberal Arts at Wabash College to the Center for Research on Undergraduate Education at The University of Iowa, and I am

indebted to Charlie and the Center of Inquiry's commitment to and support of CRUE's graduate students and alumni.

I do not have enough pages to thank each individual along the way. I know you know who you are, and I thank you for being a part of this experience. I look forward to sharing the years to come with you.

## TABLE OF CONTENTS

LIST OF TABLES	vii
CHAPTER	
I. INTRODUCTION	1
Research Problem, Background of Study, and Brief Literature Review	1
Gaps in the Literature	3
Purpose Statement	5
Student Population of Interest	5
Significance of the Study and Research Questions	7
Overview of Methods	8
Definitions of Terms	10
Delimitations, Limitations, and Assumptions	11
Conclusion	13
II. REVIEW OF LITERATURE	16
Purpose of Literature Review	16
Research on Altruism	19
Participation in College Experiences and the Effects on ASR	23
Conceptual Framework	27
Human capital	27
Social capital	30
Cultural capital	35
Summary of human, social and cultural capital	37
Theoretical Framework	39
First-Generation Status: Examining Methodologically-Appropriate Sub-Samples	44
First-Generation Participation in ASR Behaviors	46
Conclusion	47
III. METHODS	53
Introduction	53
Institutional Sample	54
Student Sample	54
Data Collection	55
Dependent Measure	57
Independent Measures	58
Analyses	65
Ordinary least squares regression	65
Design effect	66
Comparing first-generation with non-first-generation students	68

Missing Data	68
Conclusion	70
<b>IV. RESULTS</b>	<b>71</b>
Introduction	71
Methodology Summary	71
Descriptive Analyses	72
Results	76
Student Background Characteristics and Precollege Experiences	79
First-generation students	79
Non-first-generation students	80
College Experiences and Good Practices	81
First-generation students	82
Non-first-generation students	83
Differential Effects	86
Summary of Results	89
<b>V. DISCUSSION, IMPLICATIONS, AND CONCLUSIONS</b>	<b>91</b>
Introduction	91
Summary of Results	92
Discussion of Results	96
Summary Statement	105
Implications for Future Research	105
Implications for Practice	108
Relationship of Results to Theory	112
Limitations	115
Conclusion	117
<b>APPENDIX    OPERATIONAL DEFINITIONS FOR DEPENDENT AND                   INDEPENDENT MEASURES</b>	<b>118</b>
<b>REFERENCES</b>	<b>124</b>

## LIST OF TABLES

Table 1.	Descriptive Statistics on Precollege and College-Level Variables using the Wabash National Study of Liberal Arts Education	74
Table 2.	Standardized Precollege and College Effects of First-Year Experiences and Good Practices on Altruistic and Socially Responsible Behavior using the Wabash National Study of Liberal Arts Education	77

## CHAPTER I

### INTRODUCTION

#### **Research Problem, Background of Study, and Brief Literature Review**

Individual students investing in higher education primarily consider the private or internal benefits associated with higher levels of education that accrue entirely to the individual and they often ignore the public or external benefits that accrue entirely to society. In addition, many private benefits are easily measured and information about the numerical magnitudes of private benefits is widely distributed among and accessible to both individual students and society. Public benefits to society are often nonmonetary and difficult to measure and information about the substantial magnitudes of the public benefits of higher education is poorly distributed and generally inaccessible, making the members of society, as the sole recipients of these benefits, relatively unaware of the nature, extent, and magnitude of the public benefits from higher education investments (McMahon, 2009; Paulsen, 2001b; Paulsen & Toutkoushian, 2007b; Paulsen & Toutkoushian, 2008). As a result, the public's opinion on state budgetary allocations towards higher education is often based on their high level of awareness of the private benefits of higher education and their perception that higher education primarily serves to advance an individual's social mobility. The values and beliefs of society regarding the public benefits of higher education, relative to the costs, affect their commitments to support public investment in postsecondary institutions (Institute for Higher Education Policy, 1998; McMahon, 2009; Paulsen, 2001b; Shapiro, 2005). For higher education to gain substantial public support and legitimacy, the role of college education in the

provision of public or external benefits must be more fully studied by researchers and, as a result, more deeply understood by the members of society as the recipients of these public benefits of higher education.

Some of the most common non-monetary public or external benefits that are empirically associated with public investment in higher education include students' and graduates' engagement in volunteerism, increased participation in public affairs and community involvement, increased participation in civic organizations, the development of personal attitudes towards public programs, openness to free speech for others, and increased charitable giving (Baum & Payea, 2004; Bowen, 1977; Dee, 2004; Institute for Higher Education Policy, 1998; Leslie & Brinkman, 1988; McMahon, 2009; Paulsen, 2001b).

A number of empirical studies have examined the extent to which college fosters significant student development in a number of these areas such as community service, civic engagement, and public affairs involvement during and after college (see Astin, 1993; Pascarella & Terenzini, 1991; 2005). Yet, a dearth of literature exists estimating the effects of specific aspects or characteristics of the college experience on students' participation in volunteerism, community involvement, civic engagement, and kindred factors identified above – which are referred to in the present study as *altruistic and socially responsible behavior* – as a composite measure. Astin (1993) recognized a growing trend in the importance of student development and engagement in altruism and social activism within higher education. Working with colleagues at the Higher Education Research Institute (HERI), Astin created an altruism and social activism factor using items from the Cooperative Institutional Research Program (CIRP) survey. A

number of researchers adopted this altruism factor and conducted multivariate analyses examining well-being (Bowman, Brandenberger, Lapsley, Hill, & Quaranto, 2010; Hill, Burrow, Brandenberger, Lapsley, & Quaranto, in press), personal growth and purpose in life (Bowman, Brandenberger, Hill, & Lapsley, in press), and adulthood civic and political participation (Misa, Anderson, & Yamamura, 2005). More recently, the Association of American Colleges and Universities (AAC&U) identified global and civic learning as two important outcomes college educators should monitor entering the twenty-first century (see Leskes & Miller, 2006). Clearly, these two outcomes also relate to altruism and social responsibility.

### **Gaps in the Literature**

Unfortunately, research examining college experiences that predict altruistic and socially responsible behavior (herein referred to as ASR) in college is limited. This can be attributed to a number of factors. First, as previously noted, there is a substantial lack of research using a composite measure of ASR as a dependent variable measure; prior studies estimating community or political involvement typically rely on only a single item dependent measure. Second, the covariates within the analyses have been applied to only a limited range of curricular measures (e.g., majors), co-curricular measures (e.g., service learning), and measures of in-college experiences potentially related to ASR (e.g., community service, participation in diversity workshops, attending religious ceremonies). Many other specific aspects of the college experience that could be potentially important in student development of ASR have been left largely unexamined. Of particularly note, a review of the literature did not uncover a single study that examined the effects of theoretically vetted good practices and kindred socialization experiences in college within

undergraduate education (e.g., student-faculty interactions, peer interactions) on ASR. Lastly, not a single study examined the extent to which college experiences influence ASR across unique sub-populations of students, in particular first-generation students. Level of education is considered one of the most powerful predictors of altruistic and socially responsible behavior (Putnam, 2000), yet how specific college experiences impact altruism or social responsibility, as well as how these effects may vary for students with different levels of parental education is undocumented.

Higher education serves and benefits both the individual and society, and as such, college graduates are expected to develop outcomes that generate both private or internal benefits (e.g., personal satisfaction) and public or external benefits (such as altruism and support for the community). An important cyclical pattern exists in the relationship between the development and promotion of ASR in college and the subsequent engagement in ASR after college. Individuals who engage in ASR during college are more likely to engage in ASR, which generate public or external benefits later in adulthood (see Misa et al., 2005). As more college graduates participate in ASR in a societal setting, thereby generating greater public benefits of investment in college, the more likely the public will support higher education. Of equal importance to this cycle are the individual attributes and characteristics associated with ASR. The sociological and economic concepts of human, social, and cultural capital serve as useful elements in the conceptual framework for this study. These three forms of capitals have strong explanatory power as to why students develop and engage in selfless, affective outcomes such as ASR during and after college. To examine how first-year college experiences

affect a student's ASR, an integration of socialization theory and college impact models serve as the theoretical framework.

### **Purpose Statement**

The present study addresses the research problem and the gaps in the existing literature by examining the effects of selected first-year college experiences on students' development of ASR – a critical college outcome that leads to significant public or external benefits – and examines whether the effects of specific college experiences on ASR vary between first-generation and non-first-generation students. Summarizing the intended social goals of postsecondary institutions, Bowen (1977) stated that higher education “sets in motion a dynamic process leading to changes in society, which in turn will lead to further changes in both individuals and society” (p. 50). A student's attitudes, values, and behavior patterns are all modified by the collegiate experience, which can subsequently influence social change upon graduation (Bowen, 1977).

### **Student Population of Interest**

Projections conducted by the U.S. Census Bureau (2004) suggest that the racial/ethnic composition of the United States total population is shifting. By 2050, current minority population – black, Hispanic, Asian/Pacific Islander, and American Indian – will exceed 50 percent of the total United States population and will become the new majority. Postsecondary institutions are witnessing similar racial/ethnic composition trends in their incoming student populations (see Jamieson, Curry, & Martinez, 2001; National Center for Education Statistics, 2009). Percent change calculations of projected enrollment numbers conducted by the National Center for Education Statistics (2009) estimate an increase in the enrollment of black students (19.5%), Hispanic students

(26.7%), Asian students (21.4%), and “other” minority students (14.1% ) over the next eight years.

Linked with the surge of minority students into postsecondary education are the expected increases of first-generation students (Strayhorn, 2006). First-generation students are students whose parent(s) has not attended a postsecondary institution and therefore have no college experience. These students are more likely to be minorities, of low socioeconomic status (SES), speak English as a second language, and be non-United States citizens (Bui, 2002; Lee, Sax, Kim, & Hagedorn, 2004; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007; Warburton, Bugarin, & Nunez, 2001). In 2005, 28.2 percent of first-generation students were Hispanic, 22.6 percent were black, 19.0 percent Asian/Asian American, 16.8 percent Native American, and 13.2 percent white (Saenz et al., 2007). Some researchers even debate that first-generation status could serve as a proxy for race/ethnicity (Davis, 2010). These student background characteristics suggest that first-generation students tend to have access to fewer college-going resources, are more likely to have localized and less cosmopolitan worldviews, and are likely to be more sensitive to new social and cultural experiences, such as enrolling into the collegiate environment, compared to their non-first-generation counterparts.

Research examining first-generation students is vast, including areas in college choice and aspirations (e.g., Bui, 2005; Ceja, 2006; Gibbons & Shoffner, 2004), college academic achievement (e.g., Chen & Carroll, 2005; Dennis, Phinney, & Ivey-Chuateco, 2005; Ting, 2003), and persistence (e.g., Duggan, 2001; Harrell & Forney, 2003; Ishitani, 2006; Lohfink & Paulsen, 2005; Rendon, 1995; Somers, Woodhouse, & Cofer, 2004; Thomas & Quinn, 2007; Warburton et al., 2001). Only a few studies have explored the

relationship between first-generation status and the college experience, and more importantly, how these experiences affect various college outcomes (see Padgett et al., 2010; Padgett, Johnson, & Pascarella, in press; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Most aspects of the college experience have been developed, designed, and implemented, with the traditional college student in mind. In this context, the effects of college experiences on college outcomes are expected to be similar across students. For example, Chickering and Gamson's (1991) influential Seven Principles for Good Practice in Undergraduate Education has been extensively researched and implemented across college campuses (see Cruce, Wolniak, Seifert, & Pascarella, 2006). Yet, few studies have measured the effects of the good practices across unique subsamples of students, such as first-generation students (Cruce et al., 2006; Goodman et al., 2006; Padgett et al., 2010; Padgett et al., in press; Seifert, Drummond, & Pascarella, 2006).

Longitudinal evidence (Padgett et al., 2010; Padgett et al., in press; Pascarella, et al., 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996) suggests first-generation students are uniquely sensitive to a wide range of college experiences and their impact on college outcomes. However, major gaps within the research still exist, which limits the extent to which practitioners and policymakers can adequately implement good practices geared towards unique subsamples of students.

### **Significance of the Study and Research Questions**

Using a longitudinal, pretest-posttest design, this study seeks to address the research problem and the gaps in the existing literature discussed previously. In addition, this study addresses the methodological limitations of college impact articulated in this section. These goals are achieved by examining the effects of selected in-college

experiences on students' growth or development of ASR and whether the effects of specific college experiences on ASR vary between first-generation and non-first-generation students. First-generation students may be more sensitive to the introduction of new experiences in college, and as such this study will conduct separate analyses for first-generation and non-first-generation students to more accurately assess the effect of the first-year on students' developmental impact on ASR. This study uses an ASR pretest control variable measured prior to the first year of college. As a result, variation in the ASR posttest, measured at the end of the first year of college, can be more confidently attributed to variation in the independent variable measures of specific college experiences. In combination, the ASR pretest control, along with a set of additional precollege control variables, help focus the design of this study on estimating the effects of specific in-college experiences on students' growth and development of ASR during the first year of college.

The following research questions serve as a guide for this study's analysis:

- 1) What are the effects of student background and precollege characteristics on end-of-the-first-year ASR?
- 2) What are the effects of college experiences and good practices on end-of-the-first-year ASR?
- 3) Do the effects of college experiences and good practices on end-of-the-first-year ASR differ for first-generation and non-first-generation students?

### **Overview of Methods**

The sample in this study is comprised of first-year, full-time students at 45 four-year college and universities located within the continental United States. Institutions

were invited to participate the Wabash National Study of Liberal Arts Education (WNS), a large, pretest/posttest longitudinal investigation of the effects of the liberal arts experience on educational outcomes theoretically associated with liberal arts education funded by the Center of Inquiry in the Liberal Arts at Wabash College. The undergraduates in this analysis were from three separate cohorts of freshmen students from 2006, 2007, and 2008. From these three cohorts, 16,667 first-year students were invited to participate in the study. The data collection for the WNS was conducted in two waves. The initial data collection early in the fall semester included instruments measuring student demographics, family background characteristics, high school, precollege experiences, and precollege cognitive and psychosocial scores. The follow-up data collection was conducted during the following spring semester. A number of instruments measuring the first-year experience, student engagement, and exposure to vetted good practices were administered, including the WNS Student Experiences Survey, the National Survey of Student Engagement (NSSE), and posttest measures on the cognitive and psychosocial student took in the fall semester.

Given the continuous nature of the dependent measure, ordinary least squares regressions are utilized to estimate the effects of the college experience on first-year students' ASR. The analyses are conducted in a two-stage hierarchical fashion across two sub-samples (first-generation students and non-first-generation students): 1) end-of-the-year ASR is regressed across a battery of background and precollege characteristics, including an ASR pretest measured prior to college, 2) institutional type, college experiences, and the good practices are introduced, and 3) the models are examined separately to observe if the effects of certain covariates on ASR differed in magnitude

and significance across first-generation and non-first-generation students. The ways in which researchers define first-generation status vary across studies; there is no universal definition of first-generation status (see Davis, 2010). Level of parental education is typically coded as a series of dichotomous variables – ranging from some college experience to graduate degree – with parents who have no college experience as the comparison group. Studies targeting first-generation students as a population of interest would be more comprehensive and revealing if first-generation students were selected as a unique subsample and compared with their non-first-generation peers. Thus, the effect of the college experiences included within each model is unique to each subsample on the outcome.

### **Definitions of Terms**

**ASR:** This abbreviation for altruistic and socially responsible behavior (ASR) refers to an individual's involvement in acts of civic, political, and charitable engagement for greater external benefits of society, either unselfishly or selfishly.

**Human capital:** An individual's quantifiable productive capacities, such as knowledge, skills, talents, competences, and attributes.

**Social capital:** The norms, networks, relationships, and other social connections that serve as a reciprocal resource for individuals to reference and engage in.

**Cultural capital:** The cultural resources and knowledge transmitted by individuals of high and middle socioeconomic status to their children as a means to supplement wealth and resources in maintaining their class status.

**Socialization:** Defined with a familial or societal framework, a process by which aspirants develop, acquire, or assimilate the valued norms of the social

group of which the aspirant desires to become a member. This process is often influenced by the social relationships individuals participate in within a social environment.

First-generation status: Students whose parent(s) has not attended a postsecondary institution.

Please note: Variations of the definition of first-generation status exist throughout the literature (see Davis, 2010). This particular definition of first-generation status was chosen because the college experience is not exclusively connected to obtaining a degree. In other words, even if a parent spent one day in college before dropping out, the parent still proceeded through the college choice process, financial aid process (if needed), and preparation for attending college. The single day spent on a college campus and attending class would have a significant influence on the decision to drop-out, thus theoretically providing their offspring with valuable information about the college experience.

### **Delimitations, Limitations, and Assumptions**

The scope of this study focuses on the effects of first-year college experience on students' development of ASR and examines whether these effects on ASR vary between first-generation and non-first-generation students. The sample for this study is comprised of first-year students. College impact research tends to estimate the effects of the college experience across any number of college-level outcomes. The extent to which a student "develops" certain behaviors or values within a single year may be more restrained compared to that revealed through a longitudinal assessment over multiple years.

However, given the pretest-posttest design of the WNS, this study remains a longitudinal snapshot of the first-year experience.

As is the case with all college impact studies, potential selection bias exists within the sample simply because students self-select to attend college. As such, any comparison analyses within this study may be limited to individuals who are more likely than non-college-bound peers to have high levels of human, social, and cultural capital, be highly motivated, exhibit leadership characteristics, participate in altruistic behaviors, and have higher levels of personal development. The scope of this study does not include comparison data on the impact of college on ASR between college and non-college individuals. Rather, the scope of this study explores the impact of college on students' ASR and the societal benefits associated with enrollment into college.

The dependent measure – ASR – is an empirically derived and tested factor with high reliability scores ( $\alpha = 0.83$ ). Yet, the dependent measure is limited in its capacity to capture all possible behaviors, experiences, and outcomes considered to be ASR. This is primarily due to the use of secondary data in this analysis. The use of secondary data for this analysis also limits the extent to which I can estimate a model that includes independent variables consistent with every theoretical and empirical finding within the literature. However, the longitudinal nature, availability of pretest measures, and complex sampling design of this study provides an abundance of vetted covariates to help overcome this limitation.

Similar to the limitation of using secondary data, the primary purpose of the WNS study is to examine experiences theoretically associated with liberal arts education and educational outcomes. Liberal arts colleges were specifically targeted for institutional

participation in the WNS and are purposefully oversampled and represented within the WNS institutional data. The oversampling of liberal arts colleges – which are typically selective in their admission procedures – may indirectly affect the number of first-generation students, and students with other characteristics, in the analytical sample, compared to other national datasets.

The sample of interest within this study is first-generation students. The item by which first-generation status is constructed incorporates measures of both mother's and father's level of education. But research on the influence of familial factors suggests that families cannot be assumed to consist of only two biological parents (see Thomas & Quinn, 2007). Step-families or any legal guardians can all influence college-going students' human, social, and cultural capital. These two items, and their response sets, assume the respondent 1) had a parent(s), or 2) substituted legal guardian(s) for parent(s) when responding.

### **Conclusion**

Members of society recognize the internal benefits bestowed upon college graduates, yet are unaware of the external benefits higher education provides them (McMahon, 2009; Paulsen, 2001b; Paulsen & Toutkoushian, 2007b; Paulsen & Toutkoushian, 2008). Society's perception that higher education primarily serves an individual's personal benefits negatively affects their support of public investments in postsecondary institutions (Institute for Higher Education Policy, 1998; McMahon, 2009; Paulsen, 2001b; Shapiro, 2005). Non-monetary benefits of higher education, including volunteerism, participation in public affairs and community involvement, increased charitable giving, and the like (Baum & Payea, 2004; Bowen, 1977; Dee, 2004; Institute

for Higher Education Policy, 1998; Leslie & Brinkman, 1988; McMahon, 2009; Paulsen, 2001b) legitimize higher education's role in educating future leaders and altruistic members of society. Empirical studies have examined how colleges impact student development outcomes across a number of covariate altruistic behaviors, including involvement in community service, civic engagement, and public affairs (see Astin, 1993; Pascarella & Terenzini, 1991; 2005). A significant gap in the literature exists when it comes to estimating the effects of the first-year college experience on students' overall ASR as a developmental outcome (a factor comprised of a collection of ASR behaviors, including examples such as volunteerism, community involvement, and civic engagement).

The purpose of this study is to estimate the effects of first-year college experiences on student development of ASR. Furthermore, given their greater likelihood of sensitivity to change in the college environment, first-generation students are identified as a sub-sample and specifically targeted as to whether the effects of college experiences on ASR vary between first-generation and non-first-generation students. Chapter two presents a substantial and exhaustive literature review that explores the connections between college experiences and ASR. Human, social, and cultural capital serve as a conceptual framework for this study and college impact and socialization models serve as a theoretical framework within the connections between college experiences and ASR. Chapter three provides a thorough examination of the overall research approach, including details on the sample, dependent and independent measures, research methods, and statistical analyses used in the study. An exhaustive and detailed results section, with a number of tables and an appendix serving as companions, is presented in Chapter four.

Lastly, Chapter five provides a discussion of the overall results of this study and how they can guide future research on first-year students' growth or development of ASR. Chapter five also examines the implications these results have for policy, practice and implementation within higher education, as well as the relationship between the findings and theory, and concludes with remarks on the overall findings of this study.

## CHAPTER II

### REVIEW OF LITERATURE

#### **Purpose of Literature Review**

This chapter reviews the theory and research literature related to the study of ASR as an important outcome of college and the effects of selected college experiences on student development of ASR<sup>1</sup>. After a brief introduction, the chapter begins with a review of theory and research on the construct of ASR and conceptualizations of why it is a valued outcome of college. Next, the chapter reviews research on the effects of the overall college experience and the effects of specific elements of the college experience on the development and promotion of students' engagement in ASR behaviors during and after college. A number of key sociological and economic constructs – human capital, cultural capital and social capital – are then introduced and examined as potentially useful concepts to inform the analysis and study of ASR and some of the factors that might impact its development. The next section develops an overarching theoretical framework to guide the study. The theoretical framework is the result of an integrative analysis of several college-impact models and key concepts from socialization theory. The subsequent section discusses the rationale for the importance of studying the effects of college experiences on outcomes separately for first-generation and non-first-generation students. A concluding section summarizes the key elements of the review and previews the forthcoming methodology chapter.

Higher education institutions can gain public legitimacy by providing future generations with the capacities, values, beliefs, and commitments to ensure society's

---

<sup>1</sup> Please note: The use of the phrase “Altruistic and Socially Responsible behavior” – ASR – is unique to this study. Interchangeable terms are used through the literature, and to remain consistent with prior research, I will only use ASR in Chapter 2 as it relates to the dependent measure of this study

overall goal of generational success (Shapiro, 2005). Upon its inception in 1636, Harvard College recognized the importance of establishing a society with cultured men and relied on its educational ideals to train future leaders. This mission of Harvard College was clearly established in its charter, which calls “For the advancement of all good literature artes and Sciences in Harvard College...to the education of the English & Indian Youth of this Country in knowledge” (Harvard College charter, May 31, 1650). From the colonial colleges’ perspective, the primary mission of college was on transforming young men into honorable public servants (Thelin, 2004; Vine, 1976). Similarly, in his renowned treatise on the modern university, Clark Kerr (2001) claims that like its progenitors, the ‘multiversity’ also serves society, or more expressively, “it serves society almost slavishly” (p. 19). By educating students, postsecondary institutions develop a student’s understanding of social, cultural, and political institutions, prepare student’s to think critically, analytically, and reflectively, and develop an individual’s value structure and moral character (Pascarella & Terenzini, 1991). This development and growth is fostered by the collegiate experience. Pace (1974) succinctly describes the impact of college on external benefits by stating:

The attainment of a broad range of personal and social benefits, of liberal viewpoints on important social issues, and of subsequent involvement in the civic and artistic life of the community seems to be related to the extent to which the college experience provided a rich opportunity for personal and social relationships, involvement in campus activities, and in associations with the faculty. (p. 129)

Higher education serves and benefits both the individual and society, and as such, college graduates are expected to develop outcomes that generate both private or internal benefits, such as higher-paying jobs, and public or external benefits, such as students’ engagement in volunteerism, participation in civic, community and public affairs, and

charitable contributions. However, for higher education to achieve significant public support and legitimacy, the role that college education plays in the provision of public or external benefits must be more fully studied by researchers and more thoroughly understood by society as the recipients of these public benefits (Institute for Higher Education Policy, 1998; McMahon, 2009; Paulsen, 2001b; Shapiro, 2005).

Several well-known non-monetary forms of public or external benefits that are positively and significantly related to investment in higher education are increases in students' volunteerism, participation in public affairs and community involvement, and increased charitable giving (Baum & Payea, 2004; Bowen, 1977; Dee, 2004; Institute for Higher Education Policy, 1998; Leslie & Brinkman, 1988; McMahon, 2009; Paulsen, 2001b). Each of these is a common example of "altruism" as a valued outcome of college. Altruism, or altruistic behaviors, is a particularly important form of college outcome. This is because when students engage in altruistic behaviors they primarily generate public or external benefits for the recipients of such behavior – i.e., benefits for society – and only secondarily generate private internal benefits such as self-fulfillment. The study of how college experiences develop students' propensity to engage in altruism is an under-investigated area of research.

Astin (1993) noted that one of the most "exciting developments in higher education" (p. xiv) is the increase in institutional involvement in promoting service learning and community service. Participation in service activities and community service has a number of positive college outcomes with educational benefits (see Astin, 1993; Pascarella & Terenzini, 1991; 2005) that extend into the adult years (Bowman et al., 2010; Hill et al., in press; Misa et al., 2005).

Astin's (1993) recognition of the increase in the promotion of institutional-level community service likely contributed to his examination of altruism and social activism as an influential factor and outcome in college impact research. Researchers from or associated with the Higher Education Research Institute (HERI) are the limited few who have examined the effect of college experiences on altruism and social activism. However, this area of research is limited and has not fully investigated how empirically vetted college experiences – including good practices in undergraduate education – affect the development of a student's altruism in college.

With state appropriations and public financial support dwindling for higher education, society needs renewed assurance on the value of the public or external benefits of higher education. The present study addresses this research problem and the gaps in the existing literature by examining the effects of selected college experiences on students' development of altruistic behaviors – a critical college outcome that leads to significant public or external benefits.

### **Research on Altruism**

Schubert and Tweed's (2004) examination of ethnic diversity and charitable donations began with a very straightforward question, "Why charity?" (p. 53). From a limited economic standpoint, it does not make fiscal sense to willfully give away your time and resources. Yet, nearly half of the American population claim to volunteer informally (e.g., letting a neighbor's dog outside) and/or formally (e.g., organized volunteering in civic organizations and churches) (Putnam, 2000), and thus consciously "abandon material self-interest in pursuit of some form of psychic self-interest that is not readily addressed through empirical theory" (Schubert & Tweed, 2004, p. 54). Within

the context of the model of citizen, homo sociologicus views citizenship as a relationship between citizens and the community (Nie, Junn, & Stehlik-Barry, 1996). Though robust in its meaning, altruism can be defined as an unselfish preference for the good and welfare of others (Kolm, 2006). Altruistic behavior generates greater public or external benefits to the recipient of the behavior. In fact, a necessary condition for altruism is the long term perceived gains by the recipient and beneficiary of the behavior (McKean, 1975). Examining the economics of trust and altruism, Roland McKean (1975) suggests that life would be brutish and nasty if society did not share in mutual trust and compliance. Although unwritten rules exist within society, children rely on their parents and teachers to instruct them how to properly behave and follow the agreed-upon rules within the social structure.

Robert Putnam's (2000) thought-provoking book *Bowling Alone* is an examination of social change in America, the disconnect Americans have between one another, and the collapse of social structures within the community. The book's title is a reflection of a story Putnam had heard about two individuals who only know each other through their bowling league, and how this informal socialization led to a white man giving one of his kidneys to the other man, who happened to be black. This unexpected act of kindness is an example of just how powerful our personal capital is and how it can impact our decisions in life in ways that can forever benefit others. Putnam's careful deconstruction of aggregated data across the latter half of the twentieth century reveals surprising trends on Americans' political and civic participation, altruistic behaviors, and volunteering and philanthropy.

Even after the civil rights movement in the late 1960's, the frequency of politically based community involvement – including attending a political rally, signing a petition, running for local government, attending local meetings – significantly decreased leading into the new millennium (Putnam, 2000). This trend is consistent with the decrease of overall involvement in local clubs and organization. Taking into account level of education, the decline of involvement was less severe for college educated individuals (55%) compared to high school graduates (60%) and individuals who do not have a high school degree (73%). Recent studies found similar evidence indicating as level of education increases, general levels of political and social engagement increase (Helliwell & Putnam, 2007; Nie et al., 1996; Zukin, Keeter, Andolina, Jenkins, & Carpini, 2006). Though college educated individuals are participating in higher levels of political and civic activities compared to their peers, the continual decline in their overall political and civic participation, while less severe, raises additional questions about the level of psychosocial development – leadership, social skills and interactions, diversity – college graduates receive during their college experience.

A number of background characteristics are strong predictors of whether or not an individual will engage in civic involvement. Zukin et al. (2006) argue that exposure to social agents early in life allows them to gain the needed skills, attitudes, and social contacts that aid in the likelihood of being civically engaged. These characteristics include race, parental education, and gender, and will be accounted for within this study. Individuals of color are less likely to participate compared to their white peers, but race becomes non-significant when accounting for a number of other predictors of civic engagement (Zukin et al., 2006). Measuring the charitable contributions to the United

Way, Schubert, and Tweed (2004) found charitable contributions increased by black individuals if the proportion of black individuals was the majority. Furthermore, as the proportion of minorities in a community increase, overall contributions by minorities increase. Individuals from middle and high SES and who are highly educated are more likely to volunteer given their personal and financial resources (Putnam 2000), implying the importance of these two independent measures within this study. After controlling for a number of powerful predictors, level of education is considered the most powerful predictor of altruistic behavior (Putnam, 2000). College graduates (71%) are twice more likely to volunteer compared to individuals with a high school degree or lower (36%) (Putnam, 2000). It is important to note, however, that low SES families donate the same proportion of their income to charity as high SES families (Putnam, 2000). Similarly, when examining the inconsistent up and down trends of philanthropic generosity from 1929 to 1998, Putnam (2000) posits that generosity is related to the stock of an individual's social capital and not to the stock of an individual's financial capital. Zukin et al. also found social capital to be a positive precursor of civic engagement. The extent to which an individual donates their own time and money is more aligned with their social capital than their financial resources. While level of education is the most powerful predictor of altruism, the most consistent predictor is involvement in the community. Individuals who are more socially involved in the community are more likely be altruistic compared to socially reclusive individuals (Putnam, 2000).

## **Participation in College Experiences and the Effects on ASR**

As discussed in chapter one, a dearth of literature exists examining the ways and extent to which college experiences affect a student's altruism. Some prior research has typically estimated the effect of altruistic behavior (e.g., volunteering, protesting, voting practices, etc.) on other outcomes by quantifying the behavior as a dichotomous covariate – participation in the treatment = 1 and non-participation = 0 – and treating it as a predictor variable across any number of outcome measures. A number of studies have examined participation in altruistic experiences (e.g., volunteering, service learning, service involvement, political involvement) while in college across a number of college-level outcomes (e.g., grades, cognitive development, psychosocial change, attitudes, moral development) and the results have universally yielded positive effects (see Astin, 1993; Pascarella & Terenzini, 1991; 2005). Furthermore, the literature has treated ASR as both a dependent and independent measure. Within this literature review, it is important to examine the effects of various covariates on ASR and to examine how ASR behaviors affect different outcomes to get a holistic view of college students' level of involvement in ASR both during and after college. However, what is of particular interest and importance to this study is prior literature examining the effects of college-level experiences on any number of altruistic behaviors or altruism as valued college outcomes. The measure of altruism as a dependent measure was championed by HERI using data from the CIRP. As such, the limited amount of research examining the effect of college on altruism and self-interest derives from scholars at or affiliated with HERI.

Colby and colleagues (2003) argue that college graduates need not only develop intellectual and cognitive capacities but also recognize their roles in, and contribute to, the community. College and universities, in addition to providing resources for learning and intellectual growth, must provide experiences that facilitate the development of students' civic and moral commitment, including volunteering, civic engagement, and political discourse. First-year college students reportedly increased their level of participation in volunteering activities during their senior year of high school, and continued volunteering into the first few years of college (Galston, 2005). A number of hypotheses can be made to explain this positive trend, but it is important not to overlook that a significant number of incoming college students are willingly volunteering. Results from a standardized regression using data from the National Youth Survey to predict civic and political engagement among college students found campus experiences and personal attitudes significantly increase engagement (Zukin et al., 2006). Participation in institutionally-arranged volunteer work increased civic and political engagement by 0.24 standard deviations. Participation in courses that required students to watch the news increased engagement by 0.13 standard deviations compared to students whose classes did not have this requirement. In addition to college experiences, three measures of student attitudes and views (e.g., student perceives that they can influence the government, influence their college, and the perception that government has a daily impact on their life) significantly and moderately increased engagement. Pascarella and Terenzini (2005) found modest evidence in the literature published during the 1990's that service activities incorporated into the coursework positively influence future volunteering.

Astin's (1993) influential examination of college impact using data from CIRP found evidence to suggest that students develop a substantial increase in altruism during college. Astin's conclusion is supported by a number of college experiences that positively influence a student's altruistic behavior. Majoring in a physical science has a positive effect on tutoring peers and participating in programs designed to preserve the environment (Astin, 1993). Participating in courses that emphasize history or historical context has a positive effect on social activism, promoting racial understanding, and participating in programs designed to preserve the environment (Astin, 1993). Similar positive effects were associated with participation in a racial or cultural awareness workshop across measures of social activism, political orientation, being elected to student office, and participating in programs designed to preserve the environment (Astin, 1993). Consistent with these findings, a number of college curriculum measures are included in the model predicting altruism in this study. Other college experiences that led to positive effects on a student's altruism include participation in racial or cultural workshops, volunteering, attending a religious service, and having vocational or career counseling. Conversely, a few college experiences were found to have a significant negative effect or correlation on a student's altruism, including majoring in business, majoring in engineering, and number of math courses taken.

Using the 1994 College Senior Survey by HERI, Hill et al. (in press) estimate the effects of pro-social (i.e. altruistic) behaviors on various measures of well-being in early and middle adulthood, from senior year data on 416 students attending a private, Catholic university in the Midwest with a pro-social mission. The results suggest that pro-social scores were the only purpose orientation that positively related to cultural awareness,

satisfaction with the collegiate experience, and participation in service-learning. Follow-up data 13 years after their senior year, pro-social orientation was found to positively predict well-being in adulthood. One possible reason the researchers may have found positive relationships between pro-social orientation and their outcomes is because of the pro-social mission of the Catholic university. Students who self-select into the university might be motivated pro-social individuals who are likely to self-report higher scores on pro-social measures.

One study took a longitudinal approach to examine curricular and co-curricular college experiences to estimate a young adult's political and civic engagement after college (Misa et al., 2005). CIRP survey data collected three times over a ten-year period found a number of college experiences to be strong predictors of post-college civic and political involvement. Students who majored in political science, history, and ethnic studies were significantly more likely to engage in civic and political activities post-college. Cross-racial interactions and participation in cultural workshops were found to positively impact future political activism. A pair of diversity measures, including diversity experiences and course-related diversity experiences, were included in the analytic model for this study to estimate their potential effects on first-year altruism. Furthermore, students who participated in leadership programs or took leadership roles or who were religiously involved during college strongly predicted working in civic-oriented roles in the community after college. A variable measuring if a student held a leadership position during the first year of college was included in the model.

Using similar longitudinal data on college students at a Catholic university in the Midwest who completed the CIRP Freshman and College Senior Survey, researchers

estimated the effects of college volunteering and community engagement on well-being in adulthood (Bowman et al., 2010). College volunteering, taking at least one service-learning course, and religious engagement were found to significantly predict adulthood volunteering. No background characteristics – including mother’s education, parental income, and race – that were controlled for in the study significantly predicted adulthood volunteering. When used as a covariate to predict adulthood personal growth, environment mastery, purpose in life, and life satisfaction, adult volunteering was positively related to all four forms of well-being in adulthood. When Bowman et al. examined the indirect effects of college volunteering and service-learning coursework on adult well-being, significant positive relationships existed across all four measures of adulthood well-being. Bowman et al., (in press) found similar evidence that participation in curricular and co-curricular racial and cultural diversity experiences in college are positively related to adulthood personal growth, purpose in life, recognition of racism, and volunteering. These studies extend how the development of altruistic behavior in college affects adulthood behavior and further support prior research estimating the effect of altruistic behaviors across college-level and post-college adulthood outcomes (see Astin, 1993; Pascarella & Terenzini, 1991; 2005).

### **Conceptual Framework**

*Human capital.* Within the study of economics, an individual is viewed as both a consumer and producer of services. The term human capital was created to define the quantitative measure of an individual’s productivity (Thurow, 1970). Human capital is defined as an individual’s productive capacities such as knowledge, skills, talents, competences, and attributes (Becker, 1975; Paulsen, 2001a; Riordan, 1997; Schuller,

2001; Schultz, 1971a, 1971b; Taubman & Wales, 1974; Thurow, 1970). Because human capital is quantifiable, it can be measured by the value of services produced by an individual (Thurow, 1970). Individuals invest in their human capital to optimize their productivity, and yield greater earnings over their life-time (Gunaratne, 1985). Within this conceptualization, however, human capital can also be measured by an individual's altruistic behavior. Individuals who exhibit high levels of altruistic behavior are highly valued within society and business because of their perceived selflessness and regard for others. One way in which an individual can strengthen their knowledge, skill set, and altruism is by enrolling in formal education and training supplements (Gunaratne, 1985; Paulsen, 2001a; Schuller, 2001; Taubman & Wales, 1974; Toutkoushian, 2006). Schultz (1971a) refers to acquired education – both school and higher education – as a form of human capital. In the broadest application, possessing a college degree allows an individual to be more productive. The educational setting provides students the opportunity to engage in a number of experiences and social engagements that contribute to the acquisition of human capital, including civic, political, and charitable experiences. However, attending a postsecondary institution requires a substantial monetary investment so that individuals compare the expected benefits of higher education with the underlying costs and loss of foregone earnings (see McMahon, 2009; Paulsen, 2001a; Paulsen & Toutkoushian, 2007a; 2008).

Altruistic activities, such as helping others, volunteering, and caring for the environment, can yield external benefits. As stated earlier, altruistic behavior can be perceived as an investment in human capital. Economists point out that charitable acts are highly valued in our society (Schokkaert, 2006). It is easy to understand why

charitable and other altruistic behaviors are so highly valued by members of society; because when students develop altruism in college and engage in altruistic behavior in any public sphere, small or large, they generate greater public or external benefits to the recipient or recipients of the behavior – i.e., society.

When students decide to financially invest in college, they primarily consider the internal benefits – better pay, job security – that accrue to them personally (Paulsen & Toutkoushian, 2007a). But individuals who engage in altruistic behaviors are more likely to generate public or external benefits. Empirical evidence indicates that external benefits can also accrue to society as a result of individuals increasing their human capital through public investments in college (see Baum & Payea, 2004; Leslie & Brinkman, 1988; Paulsen & Toutkoushian, 2007a). Few would argue the public or external benefits generated from subsidizing elementary and secondary education (see Baum, 2004). Literacy is necessary for a democratic society and a functioning workforce that supports said society (Baum, 2004). Yet, the perceived public or external benefits associated with higher education – especially those generated from the altruism or altruistic behaviors of college students or graduates that are nonmarket public benefits – tend to be more subtle. As more individuals in society become highly educated, volunteerism increases, participation in public affairs and community involvement increases, openness to free speech for others increases, the voting electorate increases, the blood-donations increase, civic participation increases, and charitable contributions increase (Baum & Payea, 2004; Bowen, 1977; Dee, 2004; Institute for Higher Education Policy, 1998; Leslie & Brinkman, 1988; McMahon, 2009; Paulsen, 2001b; Weisbrod, 1971). Indeed, altruism is

a special form of human capital that generates large ratios of public or external benefits compared to private or internal benefits.

This is clearly portrayed by how the academic community within postsecondary education equips and provides students with opportunities to assume roles in public service. In general, the academic community promotes concerns with social issues and problems, presents students with the opportunity to engage in the study of these issues and problems, and intentionally provides students with forums for discussion and debate (Bowen, 1977). Because these experiences, curriculum, and opportunities are engrained within the college milieu, the extent to which a student actively participates in college increases their investment in human capital as a form of altruistic behaviors.

Furthermore, postsecondary institutions place a high value on fostering future leaders. As such, the academic community creates college experiences to facilitate and motivate students into leadership roles (Bowen, 1977), a highly valued form of human capital within society and the workplace. While this may be partially explained by the fact that individuals with high leadership qualities are attracted to higher education (Bowen, 1977), that does not diminish the role of colleges and universities as cultivators of skills, values, and attitudes, – i.e., human capital – including altruism or altruistic behavior as a form of human capital.

*Social capital.* College educated individuals as members of society directly influence the values, attitudes, and behavior of other members of society simply through social interactions (Bowen, 1977). These interactions provide non-college graduates in society with new and diverse outlooks on life, views on race relations, environmental issues, and public policy (Bowen, 1977). Though these interactions and associations are

most common among family and friends, such influences certainly extend into the community. The presence of significant others – family, peers, colleagues – is also an integral part of social capital theory (Coleman, 1988) and altruistic behavior. Social capital refers to the norms, networks, relationships, and other social connections that serve as a reciprocal resource for individuals to draw upon (Attewell & Lavin, 2007; Coleman, 1988; Field, 2008; Glaeser, 2001; Putnam, 2001; Riordan, 1997). The primary function of social capital is to allow the individual access to human and cultural capital through social networks (see Perna & Titus, 2005). From a civic and political scientist perspective, “social capital is conceptualized as a societal resource that links citizens to each other and enables them to pursue their common objectives more effectively” (Stolle, 2003, p.19). Sociologists prefer to frame social capital within egocentric traits and networks (Dekker, 2004). From the sociologists’ perspective, what differentiates social capital from human and cultural capital is the individual possession of charisma, social contacts, linguistic skills, and social trust (Glaeser, 2001). As such, Osbourne, Sankey, and Wilson (2007) identify three categories of connections and ties related to social capital: 1) bonding connections, comprised of family and close friends; 2) bridging ties, comprised of people with similar background and shared interests (e.g., hobbies, job, neighbors); and 3) linking ties, which are comprised of people from dissimilar backgrounds. These categories illustrate that investment in social capital can be gained in a number of settings. In other words, the more people you know and with whom you share common interests, the greater one’s social capital will be (Field, 2008). However, social capital can come in various forms that are influential in different ways, including moral enlightenment (e.g., volunteering, civic engagement, and other forms of altruism)

or moral repugnance (e.g., terrorists' organizations, hate organizations, gangs) (see Putnam & Feldstein, 2003). The social network with which individuals surround themselves shapes their perceptions on values and norms.

Putnam (2000) states, "Altruism, volunteering, and philanthropy – our readiness to help others – is by some interpretations a central measure of social capital" (p.116). However, social networks – an integral component in social capital – provide individuals with the opportunity to help one another and call attention for the need to help. Therefore, Putnam's statement suggests that social capital can be a determinant of an individual's altruism. Stated differently, there is a level of complexity in the relationship because social capital can be a determinant of altruism and altruism can be a form of social capital. Furthermore, altruistic behaviors position an individual to better generate more social capital for oneself and their family. These behaviors, and their relationship with expanding one's social network, can indirectly lead to higher levels of human and cultural capital as well.

Altruistic behavior is strongly correlated with the size of an individual's friends and social network (Putnam, 2000). In other words, the greater an individual's social capital and social ties, the more likely they are to participate in altruistic behavior – i.e., as stated above, social capital is a determinant of altruism. Similarly, children who are raised within a strong social capital nexus are significantly more engaged in political and social involvement as an adult (Smith, 1999; Zukin et al., 2006). A cross-sectional examination of four cohorts over the past century revealed that youth today who do not engage in political conversations with their parents, have a strong attraction with a political party, and or attend church on a regular basis are less likely to be political and

civically engaged (Zukin et al., 2006). Individuals who belong to formal and informal networks are more likely to donate their time and money helping others compared to socially isolated individuals (Putnam, 2000). Putnam (2000) recognizes altruism as “an important diagnostic sign of social capital” (p. 117) and as such, the examination of trends in social capital merits an examination in the trends of altruism.

College campuses are a haven for social networks and social interactions. Extensive empirical evidence examining both formal interactions on campus – e.g., co-curricular involvement, in-class faculty-student interactions, receiving feedback from faculty – and informal interactions – e.g., out-of-class peer interactions, extracurricular activities, out-of-class faculty interactions – have yielded overwhelming positive effects on a range of valued outcomes (see Astin, 1993; Chickering & Gamson, 1987; 1991; Pascarella & Terenzini, 1991; 2005). As college students continually invest in their social capital through formal and informal interaction in college, they directly increase their social network and social resources. Students who participate in curricular, co-curricular, or extra-curricular experiences related to civic, political, and charitable involvement are instantaneously surrounded by individuals who value altruistic behaviors. These experiences are prominent in college impact research (see Astin, 1993, Pascarella, 2005) and support Putnam’s (2000) assertion that altruism is both a cause and outcome of social capital.

Relationships and friendships forged between family members and personal friends are often labeled strong social ties (Fernandez Kelly, 2002). These social ties provide the individual with a sense of belonging, trust, and identity. A student, for example, whose parents are highly educated has an additive advantage of engaging in a

social structure that is likely to be composed of other highly educated individuals compared to a peer whose parents are not highly educated. The student inherently becomes a member of an educated social structure that supports their values and beliefs. Coupled with evidence suggesting highly educated individuals are more likely to be politically and socially engaged (e.g., Helliwell & Putnam, 2007; Nie et al., 1996; Zukin et al., 2006), individuals from highly educated families are more likely to be integrated in a social structure that highly values altruistic behavior. Furthermore, the degree of parental involvement in the child's academic activities is likely to increase with level of parental education (Wong, 2002). Research suggests that highly educated parents are more likely to mobilize additional resources to increase their child's social network and educational opportunities (Wong, 2002). These resources could include access and knowledge on expanding a child's social network through volunteerism and civic activities. These results further suggest that less educated parents are less able to provide their children with additional benefits and resources because of their limited capital. In other words, individuals from less educated families are less likely to have a social network that values or has the resources to support altruism. Conversely, weak social ties are comprised of interactions with individuals outside one's personal relationships, but the interactions are with more knowledgeable and powerful individuals (Fernandez Kelly, 2002). A student's interaction with a faculty member is an example of a weak social tie, in which the relationship between student and faculty is informal but the student interacts with a knowledgeable agent in an institutional setting. Students who share weak social ties with highly altruistic individuals may be more influenced to participate in altruistic behaviors and develop altruism as an outcome of college.

These concepts of social capital indirectly imply that the level of social networks varies across different racial and socioeconomic groups. Attewell and Lavin (2007) hypothesize that lower SES minority families have fewer social networks compared to middle and upper SES whites, and the reduced social capital of low SES individuals produces less opportunities for employment and education. Using data from the second and third follow-ups to the National Education Longitudinal Study (NELS) to examine parental involvement as a form of social capital on college enrollment, Perna and Titus (2005) conclude:

On average, African Americans and Hispanics are disadvantaged in the college enrollment process not only because of their own low levels of the types of economic, human, and cultural capital that are valued in the college enrollment process but also because of the low levels of resources that are available to promote college enrollment through the social networks at the schools they attend...research demonstrates that parental involvement as a form of social capital is positively related to college enrollment regardless of the level of individual and school resources. (p. 511)

Additional empirical analyses using data from the 1988 NELS confirm Perna and Titus, suggesting that educational aspirations of African American, Hispanic, and Asian American children significantly increase from having involved, optimistic parents (Kao, 2002). These results suggest that high levels of parental involvement can supplement lower levels of social capital for students of color and low SES. Extending these results further, parental involvement in altruistic behaviors may supplement low levels of altruism for students of color and low SES as well. If a child perceives their parents placing a high value on altruism, that level of involvement may translate to the child's increased involvement in altruistic behavior.

*Cultural capital.* Whereas human capital refers to the productive capacities an individual desires to optimize, and social capital refers to the social network and social

connections individuals can draw upon, the sociological concept of cultural capital tends to be defined within the familial and social framework (see Perna & Titus, 2005).

Cultural capital is broadly defined as the cultural resources and knowledge transmitted by individuals of high and middle SES to their children as a means to supplement wealth and maintain class status (Bourdieu, 1977; McDonough, 1997; Paulsen, 2001a; Riordan, 1997). In other words, cultural capital typically defines the family's lifestyle and tastes (Attewell & Lavin, 2007).

The link between cultural capital and altruistic behaviors is not as clearly defined as the link to human and social capital. As previous noted, middle and high SES and highly educated families are more likely to participate in civic activities (Putnam, 2000). Parents with more disposable income are better able to provide their children with cultural experiences – visits to museums, attending a symphony performance, visits to a historical site, learning a second language, and frequent visits to the library, just to name a few – compared to low SES and lower educated families. These cultural experiences can serve as an encouragement and introduction into altruistic behaviors and societal benefits. One empirical study found a statistically significant connection between cultural capital and altruism – in the form of volunteering. Using data from the 1998 General Social Survey, Jeannotte (2003) found individuals who participate in any number of cultural activities were 14 percent more likely to volunteer compared to those who did not participate in cultural activities. In particular, attending a concert performance or museum significantly increased the likelihood of volunteering. These types of cultural activities that significantly contribute to altruistic behavior define the culture of the

college campus. Student performances in the music and arts are frequent and often free for students to attend.

Cultural capital is not taught within the classroom; students possess it as they enter academia (Attewell & Lavin, 2007; Dumais, 2002). However, the academic success of high and middle SES students may be mistaken due to superior ability rather than being attributed to cultural capital. Attewell and Lavin suggest this phenomenon “disguises, legitimates, and reproduces class inequality in education by handicapping and excluding children of the working and lower classes” (p. 81). If students from lower SES are introduced to environments abundant with diverse cultural activities such as college campuses, they will be exposed to various cultural experiences that may expand their interests and values in altruism. To this end, higher education provides students with the opportunity to surround themselves with individuals who share similar cultural beliefs. These opportunities may directly or indirectly promote altruistic behaviors through exposure to new and enlightening culture workshops, performances, concerts, other diverse experiences.

Cultural capital is rooted within educational attainment, often referring to the credentials and educational assets parents bestow to their children (Schuller, 2001). As such, cultural capital can be viewed as a mechanism through which high and middle SES families provide quality educational opportunities that enable their children to reproduce their class status. Furthermore, college-educated individuals are more likely to change the cultural landscape and patterns within society (Bowen, 1977), which could enable high and middle SES families to continue reinforcing their class status. Parents transmit cultural capital to their children by chronicling and reinforcing the value and wealth

higher education can provide (McDonough, 1997). Conversely, cultural capital can also be used to explore how lower SES families use education to climb the class hierarchy (Schuller, 2001).

*Summary of human, social and cultural capital.* Individuals seek to optimize their productivity and to increase their human capital through their knowledge, skills, talents, competences, and attributes. While investment in human capital is typically linked to personal income, participation in altruistic behavior can also be viewed as an important investment in human capital. Individuals who participate in altruistic activities are highly valued within society and business because of their selflessness and respect for others. Because of the importance society places on the societal benefits provided by college graduates, higher education fosters growth in students' altruistic behavior through various curriculum and college experiences.

The social networks, relationships, and interactions individuals maintain refer to their social capital. The social network individuals surround themselves with influences their perceptions of important values and norms, including altruism. Putnam's extensive research on social capital contributed to his conclusion that altruism can be a cause and an outcome of investment in social capital. Colleges provide students with the opportunity to continually invest in their social capital through formal and informal interactions. Furthermore, curricular and extra-curricular experiences related to civic, political, and charitable involvement surround the student in a social environment that promotes altruistic behavior.

Cultural capital refers to the cultural resources and knowledge that high and middle SES and highly educated families use to supplement wealth as a mechanism to

maintain their class status. Though the link between cultural capital and altruistic behaviors is not as strong as the link between human and social capital, empirically evidence suggests that cultural experiences can serve to encourage altruistic behaviors. What makes cultural capital such an influential factor within the conceptual framework of this study is the direct link between cultural experiences and college campuses. Higher education heavily promotes and fosters student development in music and the arts. If students participate in these campus cultural experiences, they are theoretically more likely to engage in altruistic behaviors.

### **Theoretical Framework**

The college environment is comprised of a multitude of structural and programmatic characteristics that influence the growth, development, and experiences of undergraduate students. To fully examine the degree to which these structural and programmatic elements significantly impact the effects of selected in-college experiences on students' growth or development of ASR, it is necessary to account for potentially-biasing background characteristics, precollege experiences, and college-level experiences and engagement using college impact methodology. College impact models measuring student change concentrate not on any one student developmental theory or dimension but rather on the origins and processes through which a student changes during college (Pascarella & Terenzini, 2005). College impact models are less specific than theories of college student development and less grounded in prior developmental theory (Pascarella & Terenzini, 2005). Research on college impact tends to incorporate conceptual frameworks pertaining to student background characteristics (including parental education and SES), institutional characteristics, measures of student involvement, and

indicators of college effects (Weidman, 1989). Longitudinal data that has valid measures across all four conceptual frameworks allow researchers to measure the cumulative effect of college over time and provide empirical evidence of supporting or diminishing indicators of student success.

Astin's widely utilized and straightforward college impact model is considered the most influential (see Pascarella & Terenzini, 2005). Though conceptually refined over the years, Astin's (1993) input-environment-outcome (IEO) model has remained relatively unchanged. Within the model, inputs refer to the individual and background characteristics of the student upon entry into college. These characteristics could include parental education, SES, high school experiences, and precollege aptitude. Environment refers to the college experiences – including programs, academic activities, extracurricular activities, social networks, and faculty interactions – that a student is exposed to during college. Lastly, outcome refers to the various measures of the student's characteristics after exposure to the college environment. Student measures at time 1 (input) through to measures after exposure to college at time 2 (outcome) provide a longitudinal examination of student change over time. As such, the model assesses the effect of the college environment on student change.

Incorporating both institutional and environmental characteristics to allow for multi-institutional examinations of college impact, Pascarella (Pascarella, 1985; Pascarella & Terenzini, 2005) created the General Model for Assessing Change (GMAC). Pascarella's five set causal model is an extension of Astin's (1993) IEO college impact model. Similar to Astin's input measure, the first set within the GMAC framework is student background and precollege traits. The second set more explicitly

and directly measures the structural and organization characteristics of the college – including institutional type, enrollment, residential characteristics, and selectivity. These two sets shape the third set within the GMAC, the institutional environment. The fourth set is a more specified measure of the college environment and measures the interactions between students and either faculty, peers, and/or staff. Referred to as agents of socialization, Pascarella recognized the influential impact of social agents within the college environment. The fifth and last set is influenced by the previous sets within the GMAC and examines the quality of student effort. As such, Pascarella’s model measures student change as a function of precollege measures, socializing agents, and the quality of effort a student invests in their learning. Though the GMAC was designed to examine learning and cognitive development, the model can be utilized to study other college outcomes, including affective measures such as altruism.

An integral and well-defined variable set within Pascarella’s (1985) model is agents of socialization. Pascarella was not the first to recognize the influential benefits social networks had on college outcomes. Weidman’s (1989) college impact model of undergraduate socialization incorporates various levels of social agents that influence student change. Similar to prior college impact models (see Astin, 1993; Pascarella, 1985), Weidman incorporates precollege student background characteristics and college experiences as influential mechanisms on socialization outcomes. Of particular interest are two types or sets of socialization influences incorporated within the model: 1) parental socialization and 2) non-college reference groups. Parental socialization refers to the student’s SES, lifestyle, and relationship with their parents. Non-college reference groups are comprised of relationships students have with their peers, employers, and

community agents. These two types of socialization are viewed as external to the college experience and continually influenced by a student's background and precollege characteristics. Padgett and colleagues (2010) note that Weidman placed such a heavy emphasis on the importance of SES that he included it in two separate locations within the model – background characteristics and ongoing parental socialization.

The emphasis on socialization within Weidman's (1989) model heavily attributes the impact of college to faculty, peer, and parental interactions. Framed within the normative context of the college experience, Weidman theorized the significant influences arising from both formal social interactions – e.g., residency halls, student organizations – and informal social interactions – e.g., peer groups. Within this context, the socialization process is an integral part of a student's academic and social integration. As such, these social relationships that develop in college significantly influence a student's behavior, values, and norms. Weidman's (1989) model was developed to measure affective outcomes associated with college impact research. These outcomes included career choice, lifestyle preferences, aspirations, and values. Within the socialization and college impact framework, altruism can be viewed as a valued outcome.

More than two decades ago, Chickering and Gamson (1987) evaluated prior research on college impact and identified seven broad categories of good practices within higher education, now widely recognized as The Seven Principles for Good Practice in Undergraduate Education (also see Chickering & Gamson, 1991). These practices include encouraging cooperation among students, encouraging active learning, communicating high expectations, encouraging contact between students and faculty, giving prompt feedback, respecting diverse talents and ways of learning, and

emphasizing time on task. The incorporation of the good practices within higher education research has been extensive (see Cruce et al., 2006). Three of the nation's largest longitudinal surveys of college students – WNS, NSSE, and the Faculty Survey of Student Engagement (FSSE) – measure student's engagement and experiences with the good practices and faculty expectations for students to participate in good practices (Cruce et al., 2006; Kuh, 2001; Padgett et al., in press).

A myriad of empirical evidence supports the predictive validity of these good practices and are positively linked to cognitive, psychosocial, and personal development in college (e.g., Astin, 1993; Cruce et al., 2006; Padgett et al., in press; Pascarella & Terenzini, 1991, 2005; Sorcinelli, 1991). Yet, only a few studies have examined if the magnitude of the effects of good practices varies across unique subsamples of students or if student measures on good practices have changed over time (Cruce et al., 2006; Goodman et al., 2006; Padgett et al., 2010; Padgett et al., in press; Seifert et al., 2006). Embedded within nearly all of the good practices is the application of socialization and agents of socialization. In particular, college impact research has been inundated with studies examining faculty and peer interactions. Frequent faculty and peer interactions are considered two of the primary influences on student development (e.g., Astin, 1993; Cruce et al., 2006; Kuh & Hu, 2001; Newman & Newman, 1976; Padgett et al., 2010; Pascarella & Terenzini, 1991, 2005; Tierney, Corwin, & Coylar, 2005; Whitt, Edison, Pascarella, Nora, & Terenzini, 1999). One study in particular found student-faculty interactions to significantly contribute to student learning and personal development for all racial and ethnic groups (Lundberg & Schreiner, 2004). Upon reviewing and disseminating years of research, Astin (1993) labeled peers the “single most important

environmental influence on student development” (p. xxii). College seniors report that interactions with their peers had the greatest impact on their personal learning and development (Kuh, 1995).

### **First-Generation Status: Examining Methodologically-Appropriate Sub-Samples**

Recent projections conducted by the U.S. Census Bureau (2004) estimate that 36.2% of the total population in 2010 are minorities (i.e., non-white). By 2050, projection estimates indicate minorities will represent 52.3% of the population. Similar to the projected population trends, the race/ethnicity composition of college enrollments is shifting (Jamieson et al., 2001). In 1979, whites represented 84% of students who enrolled into college. By 1999 the total number of white students enrolling into college dropped to 71% (Jamieson et al., 2001), and current projected enrollment in all degree-granting postsecondary institutions in the fall of 2010 of white students will fall to nearly 66% (National Center for Education Statistics, 2009). Subsequently, percent change calculations of projected enrollment numbers from fall 2010 to fall 2018 estimate an increase of 19.5% in the enrollment of black students, 26.7% of Hispanic students, 21.4% of Asian students, and 14.1% of “other” minority students (National Center for Education Statistics, 2009).

In 1971, first-generation students represented 38.5% of all first-time, full-time students at four-year colleges and universities (Saenz et al., 2007). By 1991, the percent of first-generation students in four-year colleges and universities dropped to 31% (Warburton, Bugarin, & Nunez, 2001) and declined to 15.9% by 2005 (Saenz et al., 2007). However, coupled with the surge of minority students into postsecondary

education, the proportion of first-generation students is expected to increase (Strayhorn, 2006). First-generation college students are more likely to be of minority status, come from lower socioeconomic households, speak English as their secondary language, be non-United States citizens, and female (Bui, 2002; Lee et al., 2004; Warburton et al., 2001; Saenz et al., 2007). Though first-generation students are projected to be a dominant proportion of college enrollees, the range and scope of analyses examining first-generation students are limited to three areas of research: 1) college choice decisions and aspirations (e.g., Bui, 2005; Ceja, 2006; Gibbons & Shoffner, 2004), 2) academic achievement (e.g., Chen & Carroll, 2005; Dennis et al., 2005; Ting, 2003), and 3) persistence (e.g., Duggan, 2001; Harrell & Forney, 2003; Ishitani, 2006; Lohfink & Paulsen, 2005; Rendon, 1995; Somers et al., 2004; Thomas & Quinn, 2007; Warburton et al., 2001). Only recently have researchers begun to investigate the extent to which college experiences significantly affect first-generation students across cognitive and psychosocial development (Padgett et al., 2010; Padgett et al., in press; Pascarella, et al., 2004).

First-generation students enter college with substantially different levels of human, cultural, and social capital compared to their non-first-generation peers. These deficiencies in capital place first-generation students at a considerable disadvantage when arriving on college campuses. Complicating matters even further for first-generation students are the resources and policies currently in place within higher education. The college experiences and the college milieu were designed and developed with traditional students in mind. Furthermore, the research supporting these experiences was often conducted on datasets primarily comprised of traditional, white students. The extent to

which these experiences may be benefiting or hampering first-generation student development is both under-researched and unknown. Empirically, first-generation students are uniquely sensitive to the collegiate experience and various college outcomes (see Padgett et al., in press; Pascarella, et al., 2004), and as such, some college experiences are more likely to have greater developmental impact on ASR for first-generation students relative to non-first-generation students.

The present study seeks to address the research problem and the gaps in the existing literature discussed previously. In addition, this study addresses the methodological limitations of college impact articulated in this section. These goals are achieved by examining the effects of selected college experiences on students' development of ASR and examines whether the effects of college experiences on ASR vary between first-generation and non-first-generation students.

### **First-Generation Participation in ASR Behaviors**

A very limited number of studies measured first-generation students' participation in ASR. First-generation students at private four-year institutions were more likely to volunteer, attend a religious service, and discuss religion openly compared to first-generation students at public four-year institutions (Saenz et al., 2007). An examination of first-year, first-semester involvement on 215 first-generation students from a southeastern public research university revealed that first-generation students of color had more successful leadership experience compared to their white peers (Ting, 2003). Yet, white first-generation students were more likely to participate in community service compared to first-generation students of color.

Using data from the CIRP Freshman Survey, Saenz and colleagues (2007) measured first-generation students' change in student values from 1971-2005. In 1971, 69.3 percent of first-generation students reported that a meaningful philosophy of life is an essential or very important value to develop in college; 39.6 percent reported that being very well off financially was an essential or very important goal in college. By 2005, almost the direct opposite was reported, as 80.9 percent of first-generation students reported that being well off financially was a goal and only 42.0 percent reported that a meaningful philosophy of life was important. Similar longitudinal trends were reported by non-first-generation students, but the shift over time was not as prominent.

### **Conclusion**

The purpose of this study is to examine the effects of theoretically and empirically selected college experiences on students' development of ASR – a critical college outcome that leads to significant public or external benefits – and examine whether the effects of college experiences on ASR vary between first-generation and non-first-generation students. Though higher education serves and benefits both the individual and society, the role that higher education serves in the distribution of non-monetary public or external benefits –including volunteerism, participation in public affairs and community involvement, and increased charitable giving (Baum & Payea, 2004; Bowen, 1977; Dee, 2004; Institute for Higher Education Policy, 1998; Leslie & Brinkman, 1988; McMahon, 2009; Paulsen, 2001b) – must be empirically examined and more thoroughly understood by society, who are the direct recipients of these public benefits (Institute for Higher Education Policy, 1998; McMahon, 2009; Paulsen, 2001b; Shapiro, 2005). Each of these external behaviors is a form of ASR – a valued and respected behavior within society –

yet a dearth in the literature exists examining how college experiences develop students' engagement in ASR.

Research examining ASR has revealed a number of key determinants associated with increased participation in ASR. As an individual's level of education increases, their volunteerism and political and social engagement increase (Helliwell & Putnam, 2007; Nie et al., 1996; Putnam, 2000; Zukin et al., 2006). This trend is so pervasive that Putnam (2000) considers level of education the most powerful predictor of altruistic behavior. Exposure to various social networks and agents and other forms of social capital early in life allows individuals from different background – including race, parental education, gender, and age – to gain the needed skills, attitudes, and social contacts that promote civic engagement (Zukin et al., 2006).

While a great amount of educational research has examined the potential effect of participation in ASR in college (e.g., volunteering, service learning, service involvement, political involvement) on various college-level outcomes (e.g., grades, cognitive development, attitudes) that yield universal positive effects (see Astin, 1993; Pascarella & Terenzini, 1991; 2005), a very limited amount of studies have examined the impact of college on an individual's ASR. Astin's (1993) exploration of effects of the college experience on student's altruism found both positive and negative effects across a number of curricular and co-curricular experiences, including student's reported major, participation in diverse workshops, volunteering, attending a religious service, and number of courses taken. Altruistic behaviors in college were also found to predict adult well-being (Bowman et al., 2010; Hill et al., in press), post-college civic and political

involvement (Misa et al., 2005), and adulthood personal growth, purpose in life, recognition of racism, and volunteering (Bowman et al., in press).

To guide the study's investigation of the effects of college experiences on students' development of ASR, human, social, and cultural capital theory are used as a conceptual framework. Within its conceptualization, ASR can be viewed as a measure or a form of an individual's human capital. In other words, individuals who exhibit high levels of ASR enhance their productive capacities within society because a high value is placed within society and business on the perceived selflessness and regard for others associated with ASR. A significant way in which an individual can boost their ASR is by enrolling into a postsecondary institution – considered a form of human capital investment (see relevant comparisons in Gunaratne, 1985; McMahon, 2009; Paulsen & Toutkoushian, 2008; Schuller, 2001; Taubman & Wales, 1974; Toutkoushian, 2006). College provides undergraduates with the opportunity to engage in a number of civic, political, and charitable experiences and social engagements that contribute to the acquisition of higher levels of human capital. This is primarily due to the study of social issues and problems – and the opportunity to engage in these issues and problems – that higher education provides to undergraduates (Bowen, 1977). The academic community within higher education fosters college experiences that are likely to motivate students toward leadership roles and ASR (see Bowen, 1977).

College educated individuals within society can have a direct influence on the values, attitudes, and behavior of other individuals within society simply through daily social interactions (Bowen, 1977). The formal and informal presence of others – including family, peers, and colleagues – are an integral part of social capital theory

(Coleman, 1988) and altruistic behavior. Individuals surround themselves with various agents of a social network that can influence their perceptions on values and norms, including ASR. Stated differently, ASR is found to be strongly correlated with the size of an individual's social network (Putnam, 2000). Empirical evidence examining forms of social capital in college – including co-curricular involvement, in-class faculty-student interactions, out-of-class peer interactions, extracurricular activities – have yielded overwhelming positive effects across a number of college outcomes (see Astin, 1993; Pascarella & Terenzini, 1991; 2005). As college students expand their social capital through these formal and informal interactions, they simultaneously increase their social network, thus supporting Putnam's (2000) revelation that ASR can be both a cause and an outcome of social capital.

Though the link between cultural capital and ASR is less clearly defined compared to human and social capital, understanding how cultural experiences can encourage ASR is important. It is worth noting that cultural capital is not taught within the classroom and that students possess various levels of cultural capital when they enter postsecondary education (Attewell & Lavin, 2007; Dumais, 2002). Undergraduates who possess high levels of cultural capital have a distinct advantage of drawing upon additional educational and social resources compared to undergraduates who enter college with lower levels of cultural capital. Undergraduates who participate in cultural activities – attending a musical concert, attending an art exhibit – were significantly more likely to volunteer (Jeannotte, 2003). Cultural activities such as these define the cultural milieu of most college campuses, and yet they significantly contribute to ASR.

College impact models including Astin's (1993) IEO model and Pascarella's (Pascarella, 1985; Pascarella & Terenzini, 2005) GMAC model serve as a theoretical guide for this study. A well-defined variable set within Pascarella's (1985) GMAC model – and suggested in Astin's Environment variable set – is agents of socialization. Weidman's (1989) model of undergraduate socialization is significantly grounded within the formal and informal socialization and interactions that influence student change. Specifically, the emphasis on socialization within Weidman's model is heavily impacted by faculty, peer, and parental interactions. These agents of socialization are an integral part of a student's academic and social integration and theoretically influence their behavior and values. Following the introduction of these theoretical models, college impact research has been flooded with studies examining the influence of faculty and peer interactions on any number of student development outcomes (e.g., Astin, 1993; Cruce, Wolniak, Seifert, & Pascarella, 2006; Kuh & Hu, 2001; Newman & Newman, 1976; Padgett et al, 2010; Pascarella & Terenzini, 1991, 2005; Tierney, Corwin, & Coylar, 2005; Whitt et al., 1999). Similarly, Chickering and Gamson's (1987, 1991) *Seven Principles for Good Practice in Undergraduate Education* have been positive linked to student development outcomes (e.g., Astin, 1993; Cruce et al., 2006; Pascarella & Terenzini, 1991, 2005; Sorcinelli, 1991; Padgett et al., in press), though the extent to which these good practices vary across unique student subsamples have been less explored (Cruce et al., 2006; Goodman et al., 2006; Padgett et al., 2010; Padgett et al., in press; Seifert et al., 2006).

With a projected surge of minority students entering postsecondary education in the coming decades, the proportion of first-generation students is similarly expected to

increase (Strayhorn, 2006). Though first-generation students are anticipated to enter higher education at a disadvantage with regards to levels of human, cultural, and social capital as compared to their non-first-generation peers, researchers have only begun to investigate the extent to which college experiences significantly affect first-generation students on affective outcomes within the past few years (Padgett et al., 2010; Padgett et al., in press; Pascarella, Pierson, et al., 2004). Furthermore, after an extensive literature review, only two studies (Saenz et al., 2007; Ting, 2003) were uncovered that examined first-generation students' participation in ASR. This study addresses this and other gaps in the literature – identified and discussed above and throughout chapters one and two – using data from a large, longitudinal college-level investigation to estimate the effects of first-year college experiences on student development of ASR and examine whether the effects of college experiences on ASR varies between first-generation and non-first-generation students. The next chapter presents the detailed methodological plans and analytical techniques to be used to estimate the effects of first-year college experiences on student development of ASR.

## CHAPTER III

### METHODS

#### **Introduction**

The purpose of this study is to examine the effects of first-year college experiences on students' development of ASR and estimate whether the effects of first-year college experiences on ASR vary between first-generation and non-first-generation students. To this end, three research questions serve as a guide for this study:

- 1) What are the effects of background and precollege characteristics on first-year college students' development of ASR? In other words, to what extent do the characteristics students enter college with affect their personal development in ASR after the first year of college?
- 2) Controlling for background and precollege characteristics, what are the effects of college experiences and vetted good practices on first-year college students' development of ASR? This question examines if students' participation in college experiences significantly affects their ASR at the end of the first year of college.
- 3) Do the effects of college experiences and vetted good practices on first-year college students' development of ASR differ for first-generation and non-first-generation students?

These questions are examined using data from the WNS. The forthcoming sections of this chapter introduce the research methods and survey design of the WNS, including institutional sample, student sample, and data collection. The next sections then detail the factor scale of the dependent measure – end of the first-year ASR – and

the battery of independent measures to be used in this study. This following section continues with a detailed description of the analyses for this study, including an examination of the statistical procedures that are utilized to address threats to standard linear models, analysis of missing data, and analytical limitations of this study. Finally, a conclusion summarizes the methodology of this study and outlines directions for the remainder of the study.

### **Institutional Sample**

The sample in this study is comprised of first-year students at 45 four-year colleges and universities located within the continental United States. A significant proportion of institutions were selected from responding to a national invitation to participate in the WNS, while a smaller proportion sought participation after hearing about the study. Funded by the Center of Inquiry in the Liberal Arts at Wabash College, the WNS is a large, longitudinal investigation of the effects of liberal arts colleges and liberal arts experiences on cognitive, psychosocial, and personal outcomes theoretically associated with a liberal arts education. The institutions within the sample vary across institutional type, selectivity, size, and location. Liberal arts colleges were purposefully over-represented within the sample given the primary purpose of WNS. According to the Carnegie Classification of Institutions, seven of the participating institutions were classified as research universities, nine were classified as regional universities that did not grant a doctorate, and 29 were classified as liberal arts colleges.

### **Student Sample**

The individuals in the sample were first-year, full-time undergraduates from three separate cohorts of students from 2006, 2007, and 2008. Students from the research

universities were randomly selected from the incoming first-year class to participate in the study, whereas every incoming first-year student from regional and liberal arts colleges and universities was invited. The students were informed that they were participating in a national longitudinal study examining how a college affects students and ways of improving the collegiate experience. Furthermore, students were ensured in writing that any background information or answers they provided would remain confidential and never be recorded into their personal institutional records. Participants from the 2006 cohort were offered a \$50 stipend to complete the study in each of two waves of data collection. In other words, students who completed the initial data collection in the fall and who subsequently completed the final data collection in spring would receive \$100 for their participation. However, the 2007 and 2008 cohorts were never offered nor received a stipend. The designation of a stipend – or lack thereof for the 2007 and 2008 cohorts – was the only difference in how the administration of the study was conducted across cohorts.

### **Data Collection**

The data collection for the WNS was conducted in two separate waves. The initial data collection – lasting an estimated 90-100 minutes – took place during the first few weeks of the fall semester. The initial data collection included the WNS precollege survey instrument, which asked first-year students to provide information on demographics, family background characteristics, high school and precollege experiences, and college aspirations. In addition, students also completed a number of cognitive and psychosocial instruments.

To measure a comprehensive examination of the first-year experience, the follow-up data collection – lasting an estimated two hours – was conducted late in the spring semester of the first year. Student experience and engagement data was collected using two complementary survey instruments, the NSSE student survey and the WNS Student Experiences Survey. These instruments provide measures across a number of college experiences, levels of student engagement, and exposure to vetted good practices. These good practices included: exposure to effective teaching, quality of nonclassroom interactions with faculty, frequency of interaction with faculty, teaching clarity and organization, academic challenge, degree of positive peer interactions, cooperative learning, integration of ideas and experiences, diversity experiences, and other similar measures (see Pascarella, Cruce, Umbach et al., 2006; Pascarella, Wolniak, Cruce, & Blaich, 2004). Students also completed the same cognitive and psychosocial instruments, which provide posttest data comparable to the pretest data from the initial data collection in the fall. It should be noted the initial and follow-up data collections were administered and conducted by ACT.

Response rates for the follow-up data collection saw an anticipated decline across each cohort. To modify the sample to more accurately resemble the total first-year student population, a weighting algorithm was created based on each institution's first-year undergraduate population by sex (male or female), race (Caucasian, African American/black, Hispanic/Latino, Asian/Pacific Islander, or other), and ACT score (or COMPASS/SAT equivalent). The weighting algorithm does not adjust for non-response bias.

### **Dependent Measure**

Altruistic and Socially Responsible behavior – referred to as ASR in this study – is a measure of student development in orientations toward life. To measure this dimension, WNS sought permission from HERI at the University of California at Los Angeles to use a number of items from the CIRP Survey. A factor analysis was then conducted to construct this outcome measure.

ASR is an eleven-item scale in which first-year students indicated how personally important (answer sets ranged from not important to essential) it is to be involved both politically and socially in society. Based on Astin's (1993) peer factor measuring altruism and social activism, the scale implies a personal commitment or involvement on a number of the items. A principal-component factor analysis was performed using the items from the CIRP Survey, that were validated in prior models (see Astin, 1993), and yielded sound goodness-of-fit indexes. Only items with factor loadings of 0.33 or greater were eligible for inclusion in the factor solution. The scale reliability coefficient (i.e., Cronbach's alpha) was then assessed to identify the strength of the factor solution. Based on the 2006 WNS student sample, the internal consistency reliability for the scale is 0.83. Appendix A outlines the eleven items that constitute the scale and the internal consistency reliability for the scale.

Using data from the 2006 WNS student sample, the ASR pretest score was significantly correlated 0.45 with participation in volunteering during the first year of college, 0.40 with a student's openness to diversity at the end of the first year, 0.37 with the end-of-the-first-year measure on the Miville-Guzman Universality-Diversity Scale, 0.32 with the mean overall leadership scale on the Socially Responsible Leadership Scale

at the end-of-the-first year, and 0.30 with end-of-the-first-year positive literacy development. These correlations strengthen the predictive validity of the dependent measure (i.e., ASR at the end-of-the-first year) in this study.

### **Independent Measures**

Selection of independent measures for this analysis was guided by prior literature on human, cultural, and social capital and college impact research. A battery of control measures were introduced into the model to account for differences in ASR by student background characteristics and precollege experiences.

A dichotomous measure representing whether or not a student received a federal grant was included as a proxy for SES. Students' eligibility for a federal grant is primarily determined by federally-specified income thresholds. Because of its dependable representation of financial resources available to the student, this measure has been utilized within other college impact analytical models (see Salisbury, Paulsen, & Pascarella, 2010). Additionally, a continuous variable measuring the number of siblings a respondent has was included because additional college bound siblings can be considered a financial restraint for most families (Attewell & Lavin, 2007).

To examine the unique effects of racial differences on ASR (see Attewell & Lavin, 2007; Baum, 2004; Franklin, 2004; Zukin et al., 2006), four dichotomous race measures were included in the model. The four self-reported race/ethnicity measures include black, Hispanic, Asian/Pacific Islander, and other, with white students serving as the omitted category. If a student self-reported multiple race/ethnicity categories within the response, the cases were dropped to preserve a one-race omitted category. Furthermore, a dichotomous variable measuring racial composition of respondent's high

school (all white versus other) was included. This measure controls for the institutional environment the respondent attended and estimates its effect on the development of ASR.

A precollege measure estimating a student's openness to diversity was included to assess students' openness to participation in diversity workshops and experiences during college (see Bowman et al., in press; Padgett et al., in press; Schubert & Tweed, 2004; Terenzini et al., 1996). The openness to diversity measures is a seven-item scale that includes items related to diversity such as the extent to which the respondent enjoys having discussions with people whose ideas and values are different from their own, the extent to which the respondent believes that the real value of a college education lies in being introduced to different values, the extent to which the respondent enjoys talking with people who have values different from themselves because it helps better understand self and values, the extent to which the courses the respondent enjoys most are those that make the respondent think about things from a different perspective, and the like. The internal consistency reliability for the scale based on the 2006 WNS student sample is 0.83.

A dichotomous variable measuring English as a secondary language (non-English language is primary language versus English as primary language) was included as background factors related to social capital (Attewell & Lavin, 2007). Students whose primary language is not English may have greater difficulty navigating the collegiate environment and integrating themselves into the campus environment. Similar to race, Zukin et al. (2006) argues that gender is likely to affect being civically engaged. As such, a dichotomous measure for self-reported gender (male versus female) was included.

Precollege academic ability was controlled for using student's ACT score or SAT equivalent score, which was provided by the institution and not self-reported.

Vallerand and colleagues (1992) state that, "One of the most important psychological concepts in education is certainly that of motivation....motivation is related to various outcomes such as curiosity, persistence, learning, and performance" (p. 1004). Given the importance of academic motivation in educational outcomes, a continuous measure of academic motivation that measuring the students' level of intrinsic motivation was included. Academic motivation is an eight-item scale with an internal consistency reliability of 0.69, based on the 2006 WNS student sample. This factor comprises items including the extent to which the respondent is willing to work hard in a course to learn the material even if it will not lead to a higher grade, the extent to which the respondent enjoys the challenge of learning complicated new material, the extent to which respondent agrees that academic experiences (i.e., courses, labs, studying, discussions with faculty) will be the most important part of college, and the like.

A dichotomous variable measuring if a student volunteered during high school (occasionally/often verses rarely/never), was included to measure if volunteering in high school influenced the extent to which a student is predisposed to ASR and may ultimately affect their ASR development during the first year of college. This measure was one of a subset of responses derived from an overall question of high school engagement that asked respondents to think of their last year in high school and respond how often they engaged in each of the activities.

It is important to note that this study uses an ASR pretest control variable measured prior to the first year of college. In this way variation in the ASR posttest,

measured at the end of the first year of college, can be more confidently attributed to variation in the independent variable measures of specific college experiences, because the pretest score on ASR has been controlled for prior to college (Astin & Lee, 2003; Pascarella, 2006). In combination, the ASR pretest control, along with a set of additional precollege control variables, help focus the design of this study on estimating the effects of specific in-college experiences on students' growth and development of ASR during the first year of college. Furthermore, because the data for this analysis consist of three separate cohorts of students, two dichotomous measures were included to control for variations across cohorts (cohort 2008 was the omitted category). Though these two measures have little effect with regards to ASR, they serve as an important analytical control within the analyses.

Incorporating institutional characteristics within a college impact analysis allows me to account for unique differences between institutional environments (Pascarella, 1985; Pascarella & Terenzini, 2005). As such, two measures of institutional type – as defined by the Carnegie Classification system – were used as controls, and using a design set of dichotomies, regional colleges and research institutions are compared to the base group, liberal arts colleges. Theoretically, the collegiate experience should vary across institutional types. For example, liberal arts colleges' emphasis on the liberal experience may influence altruistic behaviors more compared to the larger class structure and environment found at a large research university. Community colleges were dropped from the analysis because of the significantly different environment and socialization processes that vary between two-year and four-year institutions. Complementing the precollege academic ability measure, self-reported college grades was included.

Originally, this variable was an interval variable and ranged from ‘A’ to ‘C- or lower.’ This scale was coded into a continuous variable ranging from ‘C- or lower’ to ‘A.’

College major – and the college curriculum – was one of the more significant college experiences found to influence a student’s altruistic behavior (see Astin, 1993). The WNS data does have a measure of primary major or expected area of primary major from the NSSE student survey. However, because most first-year students are undecided or are likely to switch majors before graduation, I incorporated three measures of courses taken during the academic year; humanities, social sciences, and natural sciences were selected based on Astin’s (1993) findings that found a positive relationship between majoring/coursework in the sciences and history and ASR. These continuous measures, with a response set ranging from ‘0’ to ‘5 or more courses,’ asked the respondent to report how many courses they have taken or are taking within the following general areas during the current academic year. Though the WNS dataset accounts for courses taken in a number of other areas, prior analyses using these variables have typically yielded high variance inflation factor scores, suggesting multicollinearity between these variables.

Weidman (1989) theorized that place of residency during college was a type of formal social interaction within his socialization model. As such, a dichotomous variable measuring on-campus residency (versus off-campus residency) was included within the model. Similarly, membership in a Greek organization – in the form of a campus-recognized fraternity and sorority – presents a strong social and cultural environment. Greek organizations are also heavily involved in community volunteering, campus organizations, and campus leadership. A dichotomous measure of Greek membership

(versus non-Greek membership) was included to examine the extent to which Greek membership affects ASR during the first year of college.

Though no empirical evidence was found suggesting student employment in college influences ASR, social capital theory and college socialization theory would suggest otherwise. Working during college presents the student with another social network. Furthermore, students may have chosen their place of employment based on interest in the field that may influence future curricular or co-curricular decisions and behavior. As such, a continuous measure of the total hours a student worked on- or off-campus was included in the model. This measure was created by combining two separate questions: how many hours in a typical week did the respondent spend working for pay on campus and working for pay off campus. The response set ranged in five-hour increments from '0 hours' to 'more than 30 hours.' The midpoint of each response set was calculated to transform the response sets into a more traditional continuous measure. Similar to working on-campus, the amount of time a student relaxes and socializes outside of class is directly related to social capital theory, college socialization theory, and access to social capital networks. A continuous variable measuring the number of hours per week the student spends relaxing and socializing was included in the model. The respondent was asked to report how many hours in a typical week they spend relaxing and socializing (watching TV, partying, etc.), with a response set ranging in five-hour increments from '0 hours' to 'more than 30 hours.' The midpoint of each response set was calculated to transform the response sets into a more traditional continuous measure.

A dichotomous variable measuring if a student plans to do or has already participated in study abroad (versus does not plan to) was included in the model. Though no empirical evidence examined the extent to which study abroad influences ASR, studying abroad can be identified as a key programmatic initiative for global learning, as identified by AAC&U, and human, social, and cultural capital theory and socialization theory would suggest that students who study abroad surround themselves in unique experiences that would influence their values and behaviors. Because studying abroad takes an additional monetary investment, middle and high SES families may perceive studying abroad as additional investment in human, social, and cultural capital. From a socialization perspective, study abroad is typically conducted with small cohorts of students who share similar values. This situation presents itself with a number of formal interactions with peers and faculty and informal interaction with native residents of the country of interest.

One of the primary functions of higher education is to foster the growth of future leaders and provide leadership roles throughout campus (see Bowen, 1977). A dichotomous variable (yes versus no) was included in the model that measured if the respondent held a leadership position in a student club, campus organization, residence hall, or fraternity/sorority. Prior research suggests that students who participated in leadership programs or took leadership roles were more likely to work in civic-oriented roles in the community after college (Misa et al., 2005).

One way in which college students can invest in their cultural capital is to attend art exhibits, museums, and musical performances either on- or off-campus. To measure the extent to which attending a performance in the arts affects altruism, respondents were

asked to indicate how often (never, sometimes, often, or very often) they attended an art exhibit, gallery, play, dance, or other theater performance during the current school year.

The predictive validity of Chickering and Gamson's (1987, 1991) vetted good practices are positively linked to personal development in college (e.g., Astin, 1993; Cruce et al., 2006; Pascarella & Terenzini, 1991, 2005; Sorcinelli, 1991; Padgett et al., in press). Coupled with social capital theory, Weidman's (1989) model of socialization incorporates a number of formal and informal interactions with social agents that influence student change. These interactions were found to positively influence altruistic behavior (Astin, 1993; Bowman et al., in press). To examine this connection within the first year of college, this analysis utilized eight good practice measures associated with student-faculty interactions, peer interactions, diverse interactions, and integration of college experience into one's life. These eight good practices include: quality of nonclassroom interactions with faculty, prompt feedback from faculty, teaching clarity and organization, degree of positive peer interactions, cooperative learning, integration of ideas, information, and experiences into one's life (a key outcome – see Leskes & Miller, 2006 – as identified by AAC&U), diversity experiences, and course-related diversity experiences. For the operational definitions of these good practices – including items that constitute each factor and the internal consistency reliability for each scale – and the other independent measures, please see Appendix A.

### **Analyses**

*Ordinary least squares regression.* This analysis adopted the conceptual framework of prior studies examining the impacts of college on first-generation students (Padgett et al., in press; Pascarella et al., 2004). Given the continuous nature of the

dependent measure, ordinary least squares (OLS) regressions were conducted to estimate the effects of the college experience on first-year students' ASR. When using a standard linear model for a method of analysis, five assumptions of linear regression must be satisfied to validate how the dependent measure is estimated from the values of the independent measures (Allison, 1999). These five assumptions include: 1) The dependent measure is a linear function of the independent measures, 2) The mean of the error term is zero (i.e., the combined effects of all the causes of the dependent measure) equals 0, 3) The variance of the error terms cannot depend on the independent measures, 4) The value of the error term in one case is uncorrelated with the value of the error term for any other case, and 5) The error term has a normal distribution (Allison, 1999). When these assumptions are satisfied, the performance of the OLS produces unbiased estimates and efficient coefficients. Because I estimated ASR across a fully specified model, there is a possibility that some multicollinearity exists across the independent measures. To investigate the presence of multicollinearity, a variance inflation factor (VIF) test was conducted for each independent variable. The VIF scores ranged from 1.04 – 1.96, with a mean of 1.37. These scores fall within an acceptable range, suggesting that there is limited and nonproblematic multicollinearity between the independent measures (Allison, 1999; Myers, 1990; Stevens, 2002).

*Design effect.* The analyses were conducted using multi-institutional longitudinal data assembled using a complex sampling design. To account for the nested nature of the data – defined as students nested within individual institutions of various institutional types who are likely to behave and respond similarly – a series of statistical procedures were performed across each model to control for the clustering effect. Without

accounting for this proper adjustment, students' responses may expose the analyses to a greater likelihood of negative bias in standard errors, increasing the chances of inflated test statistics and type I error.

OLS regressions were conducted in a two-stage hierarchical fashion across two sub-samples (first-generation students and non-first-generation students):

- 1) End-of-the-year altruism was regressed across a battery of background and precollege characteristics, including a pretest of the dependent variable ASR measured prior to college as a key control variable in the design of the study, received a federal grant, number of siblings, race/ethnicity, high school race composition, openness to diversity, English as a second language, gender, precollege academic ability, academic motivation, and volunteered during high school (two dichotomous controls for cohort were also included though not reported).
- 2) A series of college-level measures were introduced into the model (now referred to as the college-level model), including institutional type, college grades, courses taken in humanities, social sciences, and natural sciences, campus residency, Greek affiliation, number of total hours worked, number of hours relaxing and socializing, studying abroad, campus leadership, attended an art performance or exhibit, quality of nonclassroom interactions with faculty, prompt feedback from faculty, teaching clarity and organization, degree of positive peer interactions, cooperative learning, integration of ideas, information, and experiences into one's life, diversity experiences, and course-related diversity experiences.

*Comparing first-generation with non-first-generation students.* The overall first-year student sample was then divided into two subsamples to separately estimate the effects of the precollege control variables (stage 1) and the in-college experience variables (stage 2) on the development of ASR during the first year of college for first-generation compared to non-first-generation students. This required a formal operational distinction between the two groups. To estimate first-generation status, respondent's father and mother's educational attainment were combined into an overall level of parental education. The newly created level of parental education was recoded into a dichotomous measure: 1 = First-generation status, defined as students whose parent(s) has not attended a postsecondary institution (i.e., obtained a high school diploma/GED or lower), and 0 = At least one parent participated in some college; one or both parents had some college experience but did not receive a Bachelor's or other four-year degree, at least one parent received a Bachelor's degree, or at least one parent received a Master's degree or higher. This operational definition of first-generation status is identical to prior college impact research examining first-generation students (see Padgett et al., in press; Pascarella et al., 2004), and was used as the criterion for creating the two subsamples for the regression analyses.

### **Missing Data**

A number of missing data analysis techniques were conducted to examine the patterns of missing data across the analytical sample and to see if potential biases existed within the useable data. The maximum number of possible cases within this data is determined by the number of respondents at T2 on the composite ASR scale ( $n = 8,027$ ).

Of particular interest, only one variable had missing cases exceeding 5%. The variable measuring college grades had 415 missing cases, which represents 5.2% of the 8,027 possible cases. The variable measuring volunteered in high school had 235 missing cases, which represents 2.9% of the 8,027 possible cases. The remaining independent variables had missing cases of less than 2.9%, with 32 of the 35 independent variables in the analysis having only 0% to 2% missing cases. This suggests that the extent of overall missing data is accounted for by small percentages of missing cases on the individual covariates within the analytic model.

To address missing data in my sample, I used listwise deletion, which means that if a case has missing data for any variable, that case is excluded from the analysis. With listwise deletion, regression analysis is robust to violations in the assumption of missing at random among independent variables. However, if missing data patterns on independent variables are related to the value of the dependent variable, it is possible that some bias in regression estimates might occur (see Allison, 2001, p. 7). Therefore, I tested for patterns of missing data between each independent variable and the dependent measure ASR. Transforming each independent variable into a binary variable, where 1 = missing values in one or more cases and 0 = no missing values, I conducted separate t-tests for each independent variable to examine the nature of the missing behavior patterns. Results from these t-tests revealed that out of the entire set of 35 independent variables in the model, only two variables were found to be significant ( $p < 0.01$ , two-tail). Although listwise deletion may result in some small bias in regression estimates for these variables, because only 2 of 35 independent variables have missing value patterns related to the value of the dependent variable, and the missing cases represent only a

small proportion of the overall sample across the entire model, in general it seems a robust strategy to manage the missing data in my study.

When the small percentages of missing cases for individual independent variables were examined within the sample aggregate, a total of 1,425 missing cases existed, approximately 17.8% of the 8,027 possible cases. After applying listwise deletion to the analytical sample, 6,602 students from 45 four-year colleges and universities remained in the analysis which, given proper weighting and missing-data analyses, approximates representation of first-year students at the participating four-year institutions.

### **Conclusion**

Using data from the WNS, this analysis incorporates both theoretically and empirically supported independent measures – background characteristics, precollege measures, and college experiences – to estimate first-year students’ development of ASR. Adopting the theoretical framework of college impact models for this analysis adequately captures the effects of precollege variables, the pretest measure, the institutional influence, and the college-level experiences within a fully-specified model. Given the continuous nature of the dependent measure (i.e., ASR), the use of OLS regressions and addressing a number of sampling and data controls – sample weighting, missing data, and clustering effects – sufficiently allows for more accurate measures across the dependent and independent measures.

In chapter four, a detailed presentation and analysis of the results is presented for each model estimated: first-generation and non-first-generation students. A comparison of the effects between the two models is then chronicled.

## CHAPTER IV

### RESULTS

#### **Introduction**

This chapter comprehensively details the results of this study, which seeks to examine the effects of the first year of college experiences and good practices on undergraduate students' development of altruistic and socially responsible behavior (ASR), and estimates whether the effects vary between first-generation and non-first-generation students. Following a brief summary of the study's methodology, the results are organized by re-introducing each of the three research questions and presenting the corresponding results for first-generation and non-first-generation students.

#### **Methodology Summary**

Data for this analysis is from the Wabash National Study of Liberal Arts Education (WNS), a large, longitudinal investigation of the effects of liberal arts colleges and liberal arts experiences on student outcomes theoretically associated with a liberal arts education. Students in the analytical sample are first-year, full-time undergraduates from three separate cohorts of students from the 2006, 2007, and 2008 WNS survey cycles. To establish a foundation for a comprehensive pretest/posttest examination of the first-year experience, the data collections for the WNS were conducted in the beginning of the fall semester and near the end of the spring semester of the first year of college.

The analytical framework incorporated elements from college impact models (see Astin, 1993, Pascarella, 2005; Weidman, 1989) and prior studies examining the impacts of college on first-generation students (Padgett et al., in press; Pascarella et al., 2004). Given the continuous nature of the ASR measure, OLS regressions were used to estimate

the effects of the college experience on first-year students' ASR. The OLS regressions were conducted in a two-stage hierarchical fashion: 1) ARS regressed across student background and precollege measures, and 2) college-level experiences and good practices were added to the precollege model. A number of sampling and statistical adjustments and controls – including sample weighting and clustering effects – were utilized to more accurately measure the effects of college experiences on students' ASR. I standardized all continuous dependent and independent measures so that the coefficients represent effect sizes. Lastly, results of this study can be found in Table 2.

### **Descriptive Analyses**

Table 1 illustrates the descriptive statistics across the first-generation and non-first-generation samples. Descriptive statistics for a number of independent variables indicate a substantial degree of similarity between the first-generation and non-first-generation samples of first-year students. However, there are certainly some substantial differences between these two samples on a number of key independent variables. A number of the more noteworthy of these differences are presented here.

There were two interesting similarities based on descriptive statistics for the two samples: in the aggregate, first-generation students have average scores on the precollege measure of ASR (2.68) that were very similar to the average scores of their non-first-generation counterparts (2.67), and first-generation students have average scores on the end of first year measure of ASR (2.57) that were identical to the average scores of their non-first-generation counterparts (2.57). These descriptive statistics suggest that, in the aggregate, first-generation and non-first-generation students enter college with nearly identical ASR behaviors, on average, and these behaviors diminish slightly after the first

year of college, on average. However, in each sample, there is also substantial variation in the values of scores for individual students on both precollege and first-year measures of ASR. As presented in a later section, regression analyses indicate that variations in ASR are explained by a few precollege factors and a more substantial set of in-college experiences, and that the effects of college experiences on ASR are different for first-generation students compared to non-first-generation students.

The descriptive statistics in Table 1 indicate that among the precollege variables, first-generation students were substantially more likely to receive a federal grant (33%) compared to non-first-generation students (13%). First-generation students were also more racially and ethnically diverse, compared to their non-first-generation peers. For example, while 79% of non-first-generation students were white and only 21% were minority, a little over 56% of first-generation students were white and nearly 44% of such students were minorities. Further, a higher proportion of first-generation students reported that English is their second language (16% versus 5%). First-generation students also reported substantially lower ACT Composite scores (23%) compared to their non-first-generation student counterparts (26%). These descriptive and precollege experiences support prior research that first-generation students are more financially and racially/ethnically diverse than their peers and also enter college with some relative disadvantages in terms of some indicators of college-going resources such as human, social, and cultural capital.

Among the within-college variables, first-generation students were more likely to report lower college grades (5.62) compared to non-first-generation students (6.14). First-generation students were also more likely to live off-campus (14% versus 6%),

Table 1. Descriptive Statistics on Precollege and College-Level Variables using the Wabash National Study of Liberal Arts Education

Variables	First-Generation Students ( <i>n</i> = 677)						Non-First-Generation Students ( <i>n</i> = 5,925)					
	Mean	SD	Freq.	%	Min.	Max.	Mean	SD	Freq.	%	Min.	Max.
First-Year Altruism/Social Responsibility	2.57	0.60			1.18	4	2.57	0.59			1	4
Precollege Altruism/Social Responsibility	2.68	0.54			1	4	2.67	0.52			1.09	4
Received Federal Grant			224	33.09	0	1			772	13.03	0	1
Did not Receive Federal Grant (omitted)			453	66.91	0	1			5,153	86.97	0	1
Number of Siblings	1.95	1.21			0	4	1.65	1.04			0	4
Race - Black			104	15.36	0	1			479	8.08	0	1
Race - Hispanic			90	13.29	0	1			234	3.95	0	1
Race - Asian/Pacific Islander			84	12.41	0	1			341	5.76	0	1
Race - Other			17	2.51	0	1			185	3.12	0	1
Race - White (omitted)			382	56.43	0	1			4,686	79.09	0	1
High School Race Composition - All White			189	27.92	0	1			2,105	35.53	0	1
High School Race Composition – Diverse (omitted)			488	72.08	0	1			3,820	64.47	0	1
Openness to Diversity	3.90	0.64			1.57	5	3.90	0.62			1	5
English is Second Language			109	16.10	0	1			302	5.10	0	1
English is Primary Language (omitted)			568	83.90	0	1			5,623	94.90	0	1
Male			232	34.27	0	1			2,222	37.50	0	1
Female (omitted)			445	65.73	0	1			3,703	62.50	0	1
ACT Composite Score	22.79	4.43			13	34	26.04	4.50			8	36
Academic Motivation	3.66	0.57			1.88	5	3.60	0.56			1.25	5
Volunteered in High School			444	65.58	0	1			4,314	72.81	0	1
Did Not Volunteer in High School (omitted)			233	34.42	0	1			1,611	27.19	0	1
Institutional Type - Regional College			235	34.71	0	1			1,167	19.70	0	1
Institutional Type - Research University			127	18.76	0	1			1,676	28.29	0	1

Table 1. Continued

Institutional Type - Liberal Arts College (omitted)			315	46.53	0	1			3,082	52.01	0	1
College Grades	5.62	1.74			1	8	6.14	1.54			1	8
Courses Taken in the Social Sciences	1.44	1.16			0	5	1.50	1.17			0	5
Courses Taken in Natural Sciences	1.14	1.27			0	5	1.34	1.39			0	5
Live On-Campus			583	86.12	0	1			5,579	94.16	0	1
Live Off-Campus (omitted)			94	13.88	0	1			346	5.84	0	1
Greek Membership			88	13.00	0	1			856	14.45	0	1
Non-Greek Member (omitted)			589	87.00	0	1			5,069	85.55	0	1
Hours Worked in College	7.88	9.81			0	58	4.77	7.55			0	90
Hours Relaxing/Socializing in College	13.02	11.04			0	45	13.99	10.51			0	45
Study Abroad			378	55.83	0	1			3,771	63.65	0	1
Did Not Study Abroad (omitted)			299	44.17	0	1			2,154	36.35	0	1
Held a Leadership Position on Campus			138	20.38	0	1			1,459	24.62	0	1
Did Not Hold a Leadership Position on Campus (omitted)			539	79.62	0	1			4,466	75.38	0	1
Attended an Art Exhibit/Theater Performance	2.26	0.85			1	4	2.42	0.88			1	4
Quality of Nonclassroom Interactions with Faculty	-0.07	0.82			-2.60	1.47	0.01	0.80			-2.60	1.47
Prompt Feedback	-0.07	0.81			-2.33	1.76	0.01	0.77			-2.33	1.76
Teaching Clarity and Organization	-0.06	0.81			-3.86	1.40	0.01	0.72			-3.86	1.40
Degree of Positive Peer Interactions	-0.15	0.71			-2.82	1.11	0.04	0.71			-3.00	1.13
Cooperative Learning	-0.02	0.69			-1.95	1.63	0.01	0.72			-2.04	1.63
Integrated Ideas, Information, and Experiences	-0.03	0.59			-1.94	1.45	0.00	0.60			-2.48	1.45
Diversity Experiences	-0.01	0.61			-1.38	2.03	0.01	0.61			-1.38	2.20
Course-Related Diversity Experiences	-0.02	0.72			-0.62	4.16	0.00	0.80			-0.62	4.71

suggesting they were likely commuters or lived with family members. Supplementing the descriptive statistic that one-third of first-generation students received a federal grant, first-generation students reported working more hours in college per week (7.88) compared to their peers (4.77). A moderate difference existed between first-generation and non-first-generation students on their intent to or completion of studying abroad (56% versus 64%, respectively). Of particular interest within the college-level variables, first-generation students' mean participation across all eight good practices was proportionally lower than their peers. Though the differences range from very small (0.02) to moderate (0.19), these statistics suggest that first-generation students were overwhelming less likely to participate in or experience vetted good practices compared to their non-first-generation peers.

### **Results**

The selection of the student background and precollege characteristics and experiences was guided by significant effects and measures within the literature on human, cultural, and social capital and college impact research. Accordingly, a battery of control measures was introduced into the precollege model to account for differences in ASR due to students' background characteristics and precollege experiences.

In addition, the pretest ASR measure – assessed prior to college – was included in the precollege model to account for students' ASR prior to entering college. The presence of significant effects across any measure of students' background characteristics, precollege experiences within the precollege model, or college experiences in the college model indicate that the respective significant effects contribute to the level of students' ASR. Furthermore, the estimated effects of the independent

Table 2. Standardized Precollege and College Effects of First-Year Experiences and Good Practices on Altruistic and Socially Responsible Behavior using the Wabash National Study of Liberal Arts Education

Variables	First-Generation Students				Non-First-Generation Students			
	Precollege	SE	College	SE	Precollege	SE	College	SE
Precollege Altruism/Social Responsibility	0.56***	0.04	0.44***	0.05	0.59***	0.03	0.50***	0.03
Received Federal Grant	-0.14	0.11	-0.14*	0.06	0.01	0.04	0.03	0.03
Number of Siblings	0.01	0.04	0.00	0.04	0.02	0.02	0.02	0.02
Race – Black	0.41**	0.13	0.33**	0.12	0.24**	0.09	0.20*	0.08
Race – Hispanic	0.54*	0.25	0.31*	0.15	0.12	0.07	0.08	0.09
Race - Asian/Pacific Islander	0.33*	0.15	0.34**	0.11	0.04	0.05	0.09	0.05
Race – Other	0.19	0.12	0.17	0.12	0.14*	0.06	0.12	0.07
High School Race Composition - All White	-0.03	0.10	-0.04	0.09	-0.03	0.02	0.01	0.02
Openness to Diversity	-0.02	0.06	-0.12	0.07	0.07***	0.02	0.01	0.02
English is Second Language	-0.19	0.18	-0.12	0.13	0.00	0.06	-0.05	0.06
Male	-0.09	0.12	-0.01	0.08	-0.02	0.04	-0.03	0.04
ACT Composite Score	0.07	0.06	-0.04	0.05	0.03	0.02	0.01	0.02
Academic Motivation	-0.03	0.05	-0.07	0.04	0.00	0.02	-0.05***	0.01
Volunteered in High School	0.10	0.09	0.10	0.08	0.08	0.05	0.04	0.03
Institutional Type- Regional College			0.02	0.09			0.13*	0.05
Institutional Type- Research University			0.07	0.09			0.07	0.04
College Grades			0.05	0.03			0.01	0.01
Courses Taken in Humanities			0.03	0.04			0.02	0.02
Courses Taken in the Social Sciences			-0.06*	0.03			0.02	0.02
Courses Taken in Natural Sciences			-0.03	0.03			0.02	0.02
Live On-Campus			0.14	0.12			0.03	0.06
Greek Membership			-0.07	0.12			0.02	0.05

Table 2. Continued

Total Hours Worked in College		0.01	0.04		0.03*	0.02
Hours Relaxing/Socializing in College		-0.04	0.05		-0.03*	0.01
Study Abroad		0.25**	0.09		0.11***	0.02
Held a Leadership Position on Campus		0.15	0.13		0.08*	0.04
Attended an Art Exhibit/Theater Performance		0.01	0.04		0.01	0.01
Quality of Nonclassroom Interactions with Faculty		0.04	0.03		-0.02	0.01
Prompt Feedback		-0.01	0.05		0.01	0.01
Teaching Clarity and Organization		0.12**	0.04		0.03	0.02
Degree of Positive Peer Interactions		-0.09*	0.04		-0.02	0.02
Cooperative Learning		-0.08	0.05		0.06**	0.02
Integrated Ideas, Information, and Experiences		0.18**	0.06		0.17***	0.02
Diversity Experiences		0.27***	0.06		0.13***	0.02
Course-Related Diversity Experiences		-0.02	0.05		0.05**	0.01
$R^2$	0.36		0.54	0.42		0.51
$N$			677			5,925

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

measures throughout the model are identical to what they would be if the dependent variable were measuring gains or growth in ASR during the first year instead of the level of end-of-first-year ASR. In other words, when controlling for the pretest measure of ASR as a covariate and using the level of first-year ASR as the dependent variable, the standardized regression coefficients for each independent measure in the model are exactly the same as they would be if the dependent variable measured growth in ASR. Using a pretest/posttest design with longitudinal data does not warrant a gain score as the dependent measure to predict gains. This has been thoroughly chronicled and empirically demonstrated by Pascarella, Wolniak, and Pierson (2003) and Loes, Pascarella, and Umbach (in press). As such, throughout this study, when a significant estimate of a coefficient for an independent variable indicates that a one-unit change in the independent variable is associated with an increase or decrease in the level of ASR, this also refers to a measure of the growth, decline, or change in ASR.

### **Student Background Characteristics and Precollege Experiences**

Research question 1: What are the effects of student background and precollege characteristics/experiences on end-of-the-first-year ASR?

*First-generation students.* Despite prior research that found significant associations between a number of background characteristics and ASR, only three measures of race/ethnicity had significant effects on ASR within the precollege model for first-generation students. The presence of significant effects suggests that, after controlling for a student's precollege ASR, race/ethnicity significantly predicted a student's ASR at the end of the first year of college. Compared to their white peers,

being a black first-generation student had a significant positive effect on ASR ( $B = 0.41$ ;  $p < 0.01$ ). Similarly, being a Hispanic ( $B = 0.54$ ;  $p < 0.05$ ) or an Asian/Pacific Islander ( $B = 0.33$ ;  $p < 0.05$ ) first-generation student significantly increased ASR, compared to their white peers.

Though not truly considered a background characteristic or precollege experience, the pretest measure of ASR has a significant and substantial positive effect on end-of-the-first-year ASR ( $B = 0.56$ ;  $p < 0.001$ ). This is unsurprising because the precollege pretest measure of ASR should theoretically account for a significant proportion of the variance in end-of-the-first-year ASR.

*Non-first-generation students.* Similar to the first-generation students' precollege model, being a black non-first-generation student significantly increased ASR by 0.24 standard deviations ( $p < 0.01$ ). In addition, students who identified their race/ethnicity as other were significantly more likely to have higher levels of ASR ( $B = 0.14$ ;  $p < 0.05$ ) compared to their white peers. Furthermore, one personal value characteristic had a significant and positive effect on ASR in the precollege model. Non-first-generation students who entered college with high levels of openness to diversity were significantly more likely than their peers to have greater levels of ASR. As non-first-generation students' openness to participate in diversity workshops and experiences during college increased, ASR increased by 0.07 standard deviations ( $p < 0.001$ ), holding all other variables constant.

The pretest measure of ASR had a significant and substantial positive effect on end-of-the-first-year ASR ( $B = 0.59$ ;  $p < 0.001$ ). As reported within the descriptive analyses, the pretest coefficient is nearly identical for non-first-generation students ( $B =$

0.59) compared to first-generation students ( $B = 0.56$ ). This minor difference suggests that precollege levels of ASR have a somewhat smaller impact on end-of-the-first-year ASR for non-first-generation students compared to their first-generation peers.

Finally,  $R^2$  statistics indicate that the variables in the precollege model – and the precollege pretest measure of ASR in particular – explain 36% and 42% of variation in the end-of-first-year ASR for first-generation and non-first-generation students, respectively.

### **College Experiences and Good Practices**

Research question 2: What are the effects of college experiences and good practices on end-of-the-first-year ASR?

The selection of the college-level experiences and good practices was primarily guided by significant effects and measures in previous college impact research. Similar to the precollege model, the ASR pretest measure accounts for a significant and substantial proportion of the variance and has a significant and substantial effect on the end-of-year ASR outcome, with  $B = 0.44$  ( $p < 0.001$ ) for first-generation and  $B = 0.50$  ( $p < 0.001$ ) for non-first-generation students. It is noteworthy that the pretest coefficient was moderately larger for non-first-generation students ( $B = 0.50$ ) compared to first-generation students ( $B = 0.44$ ). As with the precollege model, this difference indicates that precollege levels of ASR have a moderately greater impact on end-of-the-first-year ASR for non-first-generation students than for first-generation students. Therefore, significant effects within the college-level model – after controlling for the ASR pretest in addition to the background and precollege characteristics – indicate the existence of

important effects of in-college experiences and factors on the outcome measure of students' end-of-the-first-year ASR.

*First-generation students.* This section presents significant findings regarding the effects of college-experience variables and good-practices variables on ASR. Black ( $B = 0.33$ ;  $p < 0.01$ ), Hispanic ( $B = 0.31$ ;  $p < 0.05$ ), and Asian/Pacific Islander ( $B = 0.34$ ;  $p < 0.01$ ) first generation students continued to have significant and greater levels of ASR compared to their white peers. Furthermore, once the college-level measures were introduced, recipient of a federal grant had a small but significant negative effect on ASR for first-generation students. Students who received a federal grant – an indicator of lower SES backgrounds -- had lower levels of ASR by 0.14 standard deviations ( $p < 0.05$ ), holding all other variables constant.

Two general college experience measures significantly predicted first-generation students' ASR: courses taken in the social sciences and studying abroad. Enrollment in social science courses significantly and negatively affected first-generation students' ASR. As a first-generation student's enrollment in social science courses increased, ASR decreased by 0.06 standard deviations ( $p < 0.05$ ), holding all other variables constant. Planning to or actually having completed a study abroad program significantly increased first-generation students' ASR by a substantial 0.25 standard deviations ( $p < 0.01$ ), holding all other variables constant. College grades, various campus activities, and other college experiences did not significantly contribute to first-generation students' ASR.

Of the eight good practices variables introduced into the college model, four were significantly related to ASR. Higher levels of teaching clarity and organization within the classroom significantly contributed to first-generation students' ASR ( $B = 0.12$ ;  $p <$

0.01). This was the lone significant finding related to faculty interaction or classroom influence. Positive peer interactions significantly decreased first-generation students' ASR. Engaging in positive peer interactions significantly, though moderately, diminished first-generation students' ASR by 0.09 standard deviations ( $p < 0.05$ ), holding all other variables constant. This significant effect is the only good practice variable that negatively affects first-generation students' ASR.

Each one-unit increase in students' integration of ideas, information, and experiences from the classroom into their daily lives significantly increased their ASR by 0.18 standard deviations ( $p < 0.01$ ), holding all other variables constant. Similarly, each one-unit increase in students' participation in diversity experiences significantly increased their ASR by 0.27 standard deviations ( $p < 0.001$ ), holding all other variables constant. This relatively large effect suggests that first-generation students who actively seek-out diversity experiences during just the first year of college alone can significantly increase their level of ASR quite substantially.

*Non-first-generation students.* Like in the previous section for first-generation students, this section presents significant findings regarding the effects of both college-experience variables and good-practices variables on ASR. Black students continued to report higher levels of ASR in college compared to their white peers. Being a black student significantly increased ASR by 0.20 standard deviations ( $p < 0.05$ ), holding all other variables constant. However, when the college-level measures were introduced into the full college-model, the effects of being a minority student who identified as other and openness to diversity were no longer significant. However, once the college-level measures were introduced, being academically motivated had a small but significant

negative effect on ASR for non-first-generation students. For each one-unit increase in precollege academic motivation, ASR diminished by a very small 0.05 standard deviations ( $p < 0.001$ ), all else being equal.

The type of institution non-first-generation students attended was found to significantly contribute to ASR. Non-first-generation students who attend a regional college report higher levels of ASR compared to their peers at liberal arts colleges. Attendance at a regional college significantly increased non-first-generation students' ASR by 0.13 standard deviations ( $p < 0.05$ ), holding all other variables constant.

A number of college experience variables were found to significantly predict non-first-generation students' ASR. The number of hours a non-first-generation student worked during the first-year – either on campus or off campus – significantly contributed their level of ASR. For each one-unit increase in hours worked, ASR increased by a very small 0.03 standard deviations ( $p < 0.05$ ), holding all other variables constant. Conversely, the number of hours a non-first-generation student relaxed or socialized significantly diminished their level of ASR. For each one-unit increase in relaxation or socializing, ASR decreased by -0.03 standard deviations ( $p < 0.05$ ).

Consistent with findings within the first-generation estimates, studying abroad significantly contributes to non-first-generation students' ASR, while coursework, various campus activities, and other college experiences do not significantly contribute. In particular, planning to or actually completed a study abroad program significantly increased non-first-generation students' ASR by 0.11 standard deviations ( $p < 0.001$ ), holding all other variables constant. This effect size is less than half of the estimated effect that studying abroad has for first-generation students. Similar to the positive

impact of studying abroad, holding a leadership position on campus during the first-year significantly increased students' ASR by 0.08 standard deviations ( $p < 0.05$ ).

Within the college model for non-first-generation students, four of the eight good practices variables significantly contributed to ASR. Cooperative learning had a small, but significant positive effect on ASR. For non-first-generation students, each one-unit increase in a student's participation in cooperative learning increased ASR by 0.06 standard deviations, ( $p < 0.01$ ), holding all other variables constant. Integrating ideas, information, and experiences had a near identical impact on ASR for non-first-generation students of the same magnitude as it does for first-generation students. For non first-generation students, each one-unit increase in a student's integration of ideas, information, and experiences from the classroom into their daily lives significantly increased ASR by 0.17 standard deviations ( $p < 0.001$ ), holding all other variables constant.

The remaining two significant good practices variables are related to diversity experiences. Participation in diversity experiences was significantly and positively related to ASR. For non-first-generation students, each one-unit increase in a student's participation in diversity experiences increased ASR by 0.13 standard deviations ( $p < 0.001$ ). Though a significant, positive effect exists for non-first-generation students ( $B = 0.13$ ;  $p < 0.001$ ), this effect size for participation in diversity experiences is substantially lower compared to the estimate for first-generation students ( $B = 0.27$ ;  $p < 0.001$ ). However, participation in course-related diversity experiences significantly increased non-first-generation students' ASR by 0.05 standard deviations ( $p < 0.01$ ), while it had no significant effect for first-generation students. This suggests that even though the

significant effect size of course-related diversity experiences was small, this good practice variable provided an additional, yet marginal increase in ASR for non-first-generation students that was not experienced by their first-generation peers.

### **Differential Effects**

Research question 3: Do the effects of college experiences and good practices on end of the first-year altruism/social responsibility differ for first-generation and non-first-generation students?

It is important to note that while separately examining the effects of college experiences and good practices on ASR across first-generation and non-first-generation students provides comparative evidence, the substantial differences in sample sizes between the groups ( $n = 677$  for first-generation students and  $n = 5,925$  for non-first-generation students) may provide inconsistencies when comparing the results of data analyses across the models of parental education. In the first-generation model, the standard errors are more likely to be inflated and the coefficients estimated with less precision compared to the non-first-generation model because of the substantially greater number of cases within the non-first-generation model. Therefore, the differential effects are compared across models without conducting post hoc statistical comparisons.

Attendance at a regional college, compared to attendance at a liberal arts college, significantly increased non-first-generation students' ASR by 0.13 standard deviations ( $p < 0.05$ ). The coefficient for attendance at a regional college for first-generation students is  $B = 0.02$ , but was not statistically significant, perhaps in part due to the much smaller sample size for first-generation students. Regardless of statistical significance, the

magnitudes of the estimated effects on ASR of attendance at a regional college varied minimally across models ( $B = 0.13$  and  $B = 0.02$ , respectively).

The number of courses taken in the social sciences significantly and negatively contributed to first-generation students' ASR, decreasing ASR by  $-0.06$  standard deviations ( $p < 0.05$ ) for each one-unit increase in courses taken. The standardized coefficient for courses taken in the social sciences for non-first-generation students was  $B = 0.02$ , both non-significant and trivial. This suggests that while coursework in the social sciences significantly and negatively contributed to ASR development among first-generation students, they had no apparent effect on ASR among their non-first-generation peers.

Three college experience variables were found to significantly contribute to non-first-generation students' ASR and have no significant effect on their first-generation peers. Number of hours worked on or off campus during the first year significantly contributed to non-first-generation students' ASR by a very small  $0.03$  standard deviations ( $p < 0.05$ ) for each one-unit increase in hours worked. The number of hours worked had no significant effect for first-generation students ( $B = 0.01$ ). As a separate measure of how students exercise their free time, the number of hours relaxing or socializing significantly decreased non-first-generation students' level of ASR by  $-0.03$  standard deviations ( $p < 0.05$ ). The effect size for socializing/relaxing was actually larger for first-generation students ( $B = -0.04$ ), though the effect was non-significant. Lastly, non-first-generation students who held a leadership position on campus during the first-year were significantly more likely to exhibit greater levels of ASR ( $B = 0.08$ ;  $p < 0.05$ ) compared to first-generation students. Interestingly, the effect size for the variable

measuring a leadership position for first-generation students was nearly double ( $B = 0.15$ ) the effect size for non-first-generation students ( $B = 0.08$ ), though non-significant.

Intending to or having completed a study abroad experience significantly and positively contributed to both first-generation and non-first-generation students' ASR. The coefficient for studying abroad for first-generation students was quite substantial ( $B = 0.25$ ;  $p < 0.001$ ) and more than double of the effect size for their non-first-generation peers ( $B = 0.11$ ;  $p < 0.001$ ). This suggests that studying abroad is important in the development of ASR for both groups of students, but has a substantially larger impact on ASR for first-generation students compared to non-first-generation students. This is not to dismiss the significant impact studying abroad has for non-first-generation students, but rather to emphasize the significantly larger magnitude studying abroad has for first-generation students.

Comparing the magnitude and directionality of the effects of good practices on ASR provides evidence of how participation in good practices differs across levels of parental education. First-generation students' perception of teaching clarity and organization significantly and positively influenced their levels of ASR ( $B = 0.12$ ;  $p < 0.01$ ); but this factor was nonsignificant for non-first-generation students. This was the lone significant effect for all three good practices directly related to faculty interactions and classroom management across both first-generation and non-first-generation subsamples. Engaging in positive peer interactions had a significant and negative effect for first-generation students. Though the coefficient was negative across first-generation and non-first-generation students ( $B = -0.09$  and  $B = -0.02$ , respectively), the estimate was only significant for first-generation students. Furthermore, the estimates for

cooperative learning ( $B = -0.08$ ) and participation in course-related diversity experiences ( $B = -0.02$ ) were both negative and non-significant, for first-generation students.

Comparatively, the estimates for cooperative learning ( $B = 0.06$ ;  $p < 0.01$ ) and participation in course-related diversity experiences ( $B = 0.05$ ;  $p < 0.01$ ) were both positive and significant for non-first-generation students.

The good practice variable measuring the integration of ideas, information, and experiences had a near identical impact on ASR for first-generation students ( $B = 0.18$ ;  $p < 0.01$ ) and non-first-generation students ( $B = 0.17$ ;  $p < 0.001$ ). First-generation and non-first-generation students also shared a significant and positive effect for participation in diversity experiences. However, the effect of participation in diversity experiences on ASR was more than double in magnitude and far more substantial for first-generation students ( $B = 0.27$ ;  $p < 0.001$ ) than for their non-first-generation peers ( $B = 0.13$ ;  $p < 0.001$ ). This suggests that participation in diversity experiences during the first year of college had a greater impact on first-generation students' ASR compared to their non-first-generation peers.

### **Summary of Results**

The results presented in this chapter illustrate the particular importance of theoretically and empirically-vetted good practices as aspects of the college experience during the first year that have significant effects on the development of ASR for both first-generation and non-first-generation students. With the ASR pretest being controlled for, background measures of students' race/ethnicity had significant impacts on end-of-first-year ASR for both first-generation and non-first-generation students. Furthermore, aside from studying abroad, a number of college experience variables independently

influenced first-generation and non-first-generation students' ASR. A number of good practices during the first year significantly contributed to students' development of ASR. First-generation students who had higher perceptions of teaching clarity and organization in the classroom, engaged more in the integration of ideas, information, and experiences from the classroom into their daily lives, and participated more in multiple forms of diversity-related experiences significantly increased their levels of ASR. Conversely, positive peer interactions significantly diminished their development of ASR. Within the non-first-generation student college model, four of the eight good practices measures significantly contributed to their development of ASR, including cooperative learning, integrating ideas, information, and experiences, participation in diversity experiences, and participation in course-related diversity experiences.

The small to moderate significant effects of these variables suggest that elements of the first year of college – particularly participation in study abroad and specific good practices that enhance students' awareness of diverse life experiences and circumstances different from their own – can significantly affect students' development of ASR. Chapter five examines these effects in greater detail and provides further discussion and interpretation of these results. Given the relatively consistent findings across variable sets and subsamples within this analysis, Chapter five also provides implication for future research, practice, and the relationship to theory. Chapter five concludes with overall limitations within this analysis, provides final conclusions of this study, and remarks on the importance of this evidence within the context of higher education.

## CHAPTER V

### DISCUSSION, IMPLICATIONS, AND CONCLUSIONS

#### **Introduction**

This study examined the effects of specific aspects of the first-year college experience on undergraduate students' development of ASR (i.e., altruism and socially responsible behavior). Considered a critical and vital college outcome in the twenty-first-century (see Leskes & Miller, 2006) – one that leads to significant public or external benefits to society – this study filled a major gap within the college impact literature by estimating the effects of specific elements of the college experience on first-year students' ASR as a composite measure. This study also examined whether the effects of the first-year experience on ASR varied between first-generation and non-first-generation students. In doing so, this study addressed another major gap within college impact literature by estimating the relationship between first-generation status and how specific aspects of the college experience predict ASR. This investigation incorporated human, social, and cultural capital theory as conceptual frameworks to guide this study. Because this investigation estimates the effects of the first-year experience on student behavior and development, college impact models – including Astin's Input-Environment-Outcome model, Pascarella's General Model for Assessing Change model, and Weidman's model of undergraduate socialization – serve as the theoretical framework. Using data from the WNS, OLS regressions were conducted to separately estimate the effects of specific aspects of the first-year experience on students' ASR for subsamples of first-generation and non-first-generation students.

This chapter summarizes and discusses the results from this analysis, and examines how the results can guide future research on students' ASR development through specific college experiences, the impact of the college experience on first-generation compared to non-first-generation students, and the overall impact of the first-year experience. This chapter then examines the implications these results have for policy, practice, and implementation within higher education. Given this study's reliance on human, social, and cultural capital theory, the relationship between the results and theory is examined. Finally, this chapter concludes with the limitations of the study and an overall summary and conclusion of this investigation.

### **Summary of Results**

Research question 1: What are the effects of student background and precollege characteristics/experiences on end-of-the-first-year ASR?

Once the precollege ASR pretest was controlled for, a few student background and precollege measures had significant impact on end-of-first-year-of-college ASR in either the first-generation or non-first-generation models. First-year students' race/ethnicity significantly predicted ASR. Being a black ( $B = 0.41$ ;  $p < 0.01$ ), Hispanic ( $B = 0.54$ ;  $p < 0.05$ ), or Asian/Pacific Islander ( $B = 0.33$ ;  $p < 0.05$ ) first-generation student had a significant positive effect on ASR, compared to their white peers. Similar to the first-generation students' subsample, being a black non-first-generation student significantly increased ASR by 0.24 standard deviations ( $p < 0.01$ ). In addition, students who identified their race/ethnicity as other had significantly higher levels of ASR ( $B = 0.14$ ;  $p < 0.05$ ) compared to their white peers. Openness to diversity ( $B = 0.07$ ;  $p < 0.001$ ) also significantly contributed to greater gains in ASR for non-first-generation

students in the precollege model. As expected, the pretest, precollege measure of ASR was significant with substantial effect sizes for both first-generation and non-first-generation students. However, the effect size for the precollege ASR pretest variable was higher for non-first-generation students ( $B = 0.59$  in the precollege model;  $B = 0.50$  in the college model) than for first-generation students ( $B = 0.56$  in the precollege model;  $B = 0.44$  in the college model); which suggests that the precollege ASR pretest has a somewhat greater impact on end-of-first-year-of-college ASR for non-first-generation students compared to their first-generation peers.

Research question 2: What are the effects of college experiences and good practices on end-of-the-first-year ASR?

Once the college experience and good practice measures were introduced into the college-level model, black, Hispanic, and Asian/Pacific Islander first-generation and black non-first-generation students continued to have significantly greater levels of ASR compared to their white peers. In addition, first-generation students who received a federal grant had lower levels of ASR by 0.14 standard deviations ( $p < 0.05$ ), holding all variables constant. Being academically motivated had a small but significant negative effect ( $B = -0.05$ ;  $p < 0.001$ ) on ASR for non-first-generation students.

Within the college models, as the number of courses taken in the social sciences ( $B = -0.06$ ;  $p < 0.05$ ) increased, levels of ASR significantly diminished for first-generation students. Conversely, planning to or actually completing a study abroad program ( $B = 0.25$ ;  $p < 0.01$ ) significantly contribute to first-generation students' ASR. Of the eight good practices within the model, teaching clarity and organization ( $B = 0.12$ ;  $p < 0.01$ ), integration of ideas, information, and experiences from the classroom into their

daily lives ( $B = 0.18$ ;  $p < 0.01$ ), and participation in diverse experiences ( $B = 0.27$ ;  $p < 0.001$ ) significantly increased first-generation students' ASR. However, engaging in positive peer interactions significantly, though moderately, diminished first-generation students' ASR ( $B = 0.09$ ;  $p < 0.05$ ).

Attendance at a regional college significantly increased non-first-generation students' ASR ( $B = 0.13$ ;  $p < 0.05$ ). Consistent with findings for first-generation students, studying abroad significantly contributed to non-first-generation students' ASR ( $B = 0.11$ ;  $p < 0.001$ ). However, two college experiences were found to significantly and positively contribute to non-first-generation students' development of ASR – number of hours worked ( $B = 0.03$ ;  $p < 0.05$ ) and held a leadership position  $B = 0.08$ ,  $p < 0.05$ . Conversely, number of hours relaxing/socializing negatively affected ASR ( $B = -0.03$ ;  $p < 0.05$ ). A number of significant effects existed across the good practices for non-first-generation students. Participation in cooperative learning ( $B = 0.06$ ;  $p < 0.01$ ), integration of ideas, information, and experiences from the classroom into their daily lives ( $B = 0.17$ ;  $p < 0.001$ ), participation in diversity experiences ( $B = 0.13$ ;  $p < 0.001$ ), and participation in course-related diversity experiences ( $B = 0.05$ ;  $p < 0.01$ ) significantly increased non-first-generation students' ASR.

Research question 3: Do the effects of college experiences and good practices on end of the first-year altruism/social responsibility differ for first-generation and non-first-generation students?

Attending a regional college ( $B = 0.13$ ;  $p < 0.05$ ) significantly increased non-first-generation students' ASR, whereas institutional type yielded no significant results for first-generation students. The number of courses taken in the social sciences ( $B = -0.06$ ;

$p < 0.05$ ), significantly diminished first-generation students' ASR, though no significant effect existed for non-first-generation students. Intending to or having completed studying abroad significantly contributed to both first-generation and non-first-generation students' ASR. Yet, the coefficient for studying abroad for first-generation students ( $B = 0.25$ ) was more than double that of their non-first-generation peers ( $B = 0.11$ ). Both working during college ( $B = 0.03$ ;  $p < 0.05$ ) and holding a leadership position ( $B = 0.08$ ;  $p < 0.05$ ) significantly increased non-first-generation students' ASR, whereas the number of hours relaxing/socializing negatively affected ASR ( $B = -0.03$ ;  $p < 0.05$ ). These significant effects were non-existent in the college model for first-generation students.

Though the effects of teaching clarity and organization were positive for first-generation and non-first-generation students, the effect is significant for only first-generation students ( $B = 0.12$ ;  $p < 0.01$ ), whereas the good practice measuring the degree of positive peer interactions was negative and significant for only first-generation students ( $B = -0.09$ ;  $p < 0.05$ ). Participation in cooperative learning ( $B = 0.06$ ;  $p < 0.01$ ) and in course-related diversity experiences ( $B = 0.05$ ;  $p < 0.01$ ) were positive and significant only for non-first-generation students. The good practice measuring the integration of ideas, information, and experiences had a positive impact on ASR for first-generation students ( $B = 0.18$ ;  $p < 0.01$ ) and non-first-generation students ( $B = 0.17$ ;  $p < 0.001$ ). Participation in diversity experiences also had a positive and significant ( $p < 0.001$ ) impact on ASR for first-generation and non-first-generation students, though the effect is more than double in magnitude for first-generation students ( $B = 0.27$ ) compared to non-first-generation students ( $B = 0.13$ ).

## Discussion of Results

Prior research identified a number of background characteristics as predictors of ASR (see Putnam, 2000; Schubert & Tweed, 2004; Zukin et al., 2006). Specifically, level of education – especially acquisition of a college education – is widely accepted as the most powerful predictor of altruism, while other consistent predictors include indicators of previous engagement in ASR such as involvement in the community (Putnam; Zukin et al.). This study used an ASR pretest variable measured prior to the first year of college, in order to control for the effects of a wide range of precollege factors that could impact the development of ASR prior to college, which in turn, could impact the study's dependent variable and subsequent outcome –in-college ASR. As a result, variation in the ASR posttest, measured at the end of the first year of college, can be more confidently attributed to variation in the independent variable measures of specific in-college experiences. In combination, the ASR pretest control, along with a set of additional precollege control variables, helped focus the design of this study on estimating the effects of specific in-college experiences on students' growth and development of ASR during the first year of college. Therefore, it is not surprising that after the precollege ASR pretest variable was controlled for in this study, few student background and precollege measures had any significant impact on end-of-first-year-of-college ASR in either the first-generation or non-first-generation samples examined. However, those that were significant had moderate to large effect sizes.

The coefficient for received a federal grant was significant and negative for first-generation students. With one-third of first-generation students reportedly receiving federal grants, this suggests that students with a lack of financial resources and whose

parents did not attend college are at a significant disadvantage in their propensity towards ASR behaviors. This is likely attributable to a social-class-based dearth of human, social, and cultural capital available to first-generation students. It becomes increasingly difficult to build altruistic and socially responsible behaviors – ones that are influenced by resources and lived experiences – when you have not been exposed to experiences that support human, social, and cultural capital. In particular, social networks are highly influential to one's understanding of and values towards ASR (see Putnam, 2000). If first-generation, low SES students enter college with lower resources and networks to reference compared to their peers, they are likely to struggle navigating the complex social network found within the college environment. More specifically, first-generation students who receive federal grants enter college with two severe limitations: 1) parents who have no experience with the daily rigors of college life and serve as a limited resource, and 2) entering college with fewer financial resources and low exposure to important social and cultural experiences.

Minority students – both first-generation and non-first-generation – had significantly greater levels of ASR compared to their white peers. Prior research has suggested that minorities were less likely to engage in civic involvement (Zukin et al., 2006). However, this study's findings suggest that, after controlling for pre-college levels of ASR, minority students develop and achieve significantly higher levels of ASR through the first year of college than their white peers. One possible explanation for this finding is that given the correlations between race and SES, minority students are likely to develop different socialization practices and habits compared to their white peers. As such, greater exposure to various social networks and agents – in the form of social

capital and socialization experiences – within college allows minority students to develop skills, relationships, and attitudes that influence ASR (see Zukin et al., 2006).

Yet, these findings are not all that surprising. Minorities tend to be raised in neighborhoods surrounded by other minorities. Research has shown that charitable contributions increased by black individuals as the proportion of black individuals within the community increased (Schubert & Tweed, 2004). Minorities of all racial and ethnic backgrounds appear to have a greater understanding and awareness of the importance of supporting your neighbor and the community as a whole. These attitudes and perspectives appear to be supported within the college environment, as the first-year of college reinforces the importance of being altruistic and socially responsible. Another possible explanation is that minority students develop higher levels of ASR because it promotes the importance of equality and equity within higher education and the community as a whole. Aware that they are clearly the racial/ethnic minority on campus, fostering and developing ASR is likely related to influential perspectives on important civic and social topics.

Whereas this study both supported and contradicted prior research on the predictive nature of student background characteristics on ASR, this study does clearly illustrate that participation in specific first-year college experiences significantly affects students' ASR. Both first-generation and non-first-generation students who indicate having the desire to study abroad or who have already studied abroad report significantly higher levels of ASR, with the effect size more than double for first-generation students compared to their non-first-generation peers. It should be noted that a selection bias may exist for students who study abroad. In other words, it is possible that students who self-

select to study abroad may already be individuals with high levels of ASR. Nonetheless, studying abroad provides students with the opportunity to experience world-wide traditions and cultures, as part of their college experience, and to gain greater awareness of diversity and circumstances different than their own. These experiences are likely to affect an individual's perception on social, political and cultural issues and act as a catalyst for local change. Furthermore, this is the only study within the literature that has found evidence that study abroad significantly and positively affects students' ASR.

In addition, the effect of studying abroad on ASR was more than twice as large for first-generation students compared to their non-first-generation peers. One possible explanation for this difference is that first-generation students tend to have a much more local and less cosmopolitan background than non-first-generation students. Moreover, first-generation students are more likely to be disadvantaged in terms of precollege access to the human, social, and cultural capital resources that are associated with study abroad opportunities. For these and kindred reasons, study abroad experiences might understandably have a greater impact on the development of ASR for first-generation students relative to their non-first-generation peers.

Though study abroad had a significant and positive effect on ASR as a co-curricular activity, the more traditional curriculum measures of courses taken in humanities, social sciences, and natural sciences do provide some understanding of how coursework can affect ASR during the first year of college. As the number of courses in the social sciences increased, first-generation students' ASR decreased. Though the effect size was small, this contradicts prior research that found enrollment in particular majors – where courses taken during the first-year serves as a proxy for college major –

to be associated with increased involvement in altruistic behaviors, including social activism, civic and political involvement, and preserving the environment (see Astin, 1993; Misa et al., 2005). One possible explanation for this phenomenon may be attributed not to the substance of the coursework but rather the load. First-year students tend to enroll in a number of social science courses as a form of exploratory interest in various majors. However, if first-generation students – who enter college more at-risk to academic demands and environmental changes – overload their course schedule with social science courses, it may be detrimental to their development of ASR.

Working during the first year had significant and positive effects on non-first-generation students' ASR. As the number of hours worked increased, non-first-generation students' ASR increased. This finding is theoretically supported by social capital and college socialization theory. Working in college provides students with an additional social network and set of resources, in addition to working with individuals outside their social and cultural norm. As such, students' invested interest in working likely contributes to their development of ASR.

Similar to the positive effects of working during college, non-first-generation students who held a leadership position during the first-year increased their development of ASR compared to their peers. Students self-select to engage in leadership activities and positions. As such, students who self-select to be leaders may already be highly altruistic and socially responsible individuals. Another possible explanation for this positive effect may be that individuals in a leadership position are more likely to witness events and participate in experiences that expose them to higher levels of altruistic behavior. As such, student leaders may actively pursue activities that broaden their

understanding of civic and social responsibilities and the importance of being an informed citizen.

Unlike highly motivated first-year students who work or hold leadership positions, non-first-generation students who spend hours relaxing/socializing have diminished levels of ASR. As the number of hours relaxing/socializing increased, students' levels of ASR decreased. Relaxing is perceived as an individualistic or personal exercise that typically removes the individual from social settings. Moreover, socialization is often a process that involves integrating yourself into a social group that share similar attitudes and beliefs. If the individual themselves or the social network an individual associates themselves with do not engage in socially responsible behaviors or activities, they are substantially less likely to develop attitudes or beliefs related to ASR. This is especially true for first-year college students who readily assimilate themselves to various social circles and cliques based on their own personal interests, attitudes, and beliefs.

Aside from study abroad, first-generation and non-first-generation students' active participation in a number of good practices in college education was found to increase students' ASR during the first year of college. Engaging in integrative learning, defined as integrating ideas, information, and experiences from the classroom into life events, significantly increased both first-generation and non-first-generation students' ASR. To the best of my knowledge, this is the first study to estimate the effect of integrative learning on ASR. AAC&U identified integrative learning as one of four key college outcomes to study for the twenty-first century (Leskes & Miller, 2006), and this finding compliments the importance placed on integrative, global, and civic learning,

each of which has meaningful conceptual relations to altruism and socially responsible views.

Participation in diversity experiences was also found to increase both first-generation and non-first-generation students' ASR. This supports prior research that found that participation in diversity experiences – including racial and cultural workshops – was positively related to altruistic behavior (Astin, 1993; Bowman et al., in press; Misa et al., 2005). As was the case for participation in study abroad experiences, the effect size for first-generation students was more than twice the effect size for non-first-generation students, suggesting that participation in diversity experiences has a substantially greater impact on first-generation students' ASR compared to their non-first-generation peers. Recent research found similar results on the effects of diversity experiences on first-generation students' critical thinking (Padgett et al., in press). As noted previously, one possible explanation for this difference in the effect on ASR due to experiences with students and ideas from diverse backgrounds, experiences, cultures and worldviews is that first-generation students tend to have more local and less cosmopolitan backgrounds than non-first-generation students and may, therefore, be more sensitive to such new experiences potentially resulting in a greater developmental impact on ASR. This, in combination with the stricter limitations on their prior access to human, social, and cultural capital resources associated with opportunities for diversity experiences, may contribute to the greater effects on ASR due to participation in diversity experiences available in the college setting.

Similar to participation in diversity experiences, non-first-generation students who engaged in course-related diversity experiences were significantly more likely to

have higher levels of ASR. Of particular interest is why curriculum-based diversity experiences significantly increases non-first-generation students ASR while having no significant impact on first-generation students. This is somewhat counterintuitive, but one possible explanation for this finding is that, in the precollege model, non-first-generation students' openness to diversity prior to college significantly increased their in-college ASR; however, precollege openness to diversity prior to college was not significant for first-generation students. In the college-level model, when engagement in course-related diversity experiences was added, non-first-generation students' precollege openness to diversity was no longer significant, while participation in course-related diversity experiences significantly increased their in-college ASR. This suggests that non-first-generation students' precollege openness to diversity may have predisposed them to enroll in courses with diversity components upon entering college, the experience of which was significantly and positively related to their in-college ASR.

A difference existed between first-generation and non-first-generation students and the effects of positive peer interactions and cooperative learning on students' ASR. Engaging in positive peer interactions significantly decreased first-generation students ASR, while participation in cooperative learning – i.e., a form of peer interaction – significantly increased non-first-generation students ASR. These findings regarding the effects of peer interactions on students' development of ASR appear to contradict prior research that found first-generation students' interactions with peers enhanced their cognitive, diversity, and psychological well-being development compared to their non-first-generation peers (Padgett et al., in press). However, one possible explanation for the findings of the present study may be that the differential effects of peer interactions

reflect the relative lack of social capital possessed by and accessible to first-generation students compared to non-first-generation students. First-generation students enter college with fewer social networks, placing them at a significant disadvantage compared to non-first-generation students when it comes to the potential effects of peer interaction on gains in ASR in the first year of college (see Attewell & Lavin, 2007).

This study also sought to estimate the effects of faculty interactions and teacher clarity and organization on students' ASR. Interestingly, only the measure of teaching clarity and organization significantly contributed to first-generation students' ASR. As prior research suggests, first-generation students' interactions with faculty negatively affected learning outcomes during the first year (Padgett et al., 2010, Padgett et al., in press). However, this study suggests that faculty who are clear and organized in their instruction and class preparation can significantly influence the development of first-generation students' ASR. Teaching clarity and organization can be perceived as a vital instructional technique that aids first-generation students' transition into and through the complex college environment. Though the remaining coefficients related to faculty interactions were non-significant, faculty may indirectly influence development in ASR through assignments and discussions that take on a more integrative learning approach that help students to tie classroom activities into real world issues and events.

Overall, after students' precollege ASR – and other precollege characteristics – was controlled for in the college-level model, several specific in-college experiences and good practices variables had significant positive effects on the development of ASR in the first year of college for both first-generation and non-first-generation students. These variables were planning to or having completed a study abroad experience; participating

in diversity experiences; and engaging in integrative learning, involving integrating ideas, information, and experiences from the classroom into life events. These three specific forms of college experiences clearly share some common elements or characteristics. For example, these college experiences provide unique opportunities for students to increase their awareness of diversity and life circumstances different from their own and to connect and apply their ideas with diverse life experiences across diverse contexts and cultures.

### **Summary Statement**

Findings from this pretest-posttest, longitudinal study suggest that a number of specific college experiences, particularly engagement and involvement in vetted good practices, significantly impact first-generation and non-first-generation students ASR, controlling for a number of student background characteristics, precollege experiences and the precollege ASR pretest. First-year students' experiences and engagement in college are influential in the development of ASR, as are a handful of student background characteristics and precollege experiences. In other words, the development of ASR is clearly fostered and supported by the college milieu.

### **Implications for Future Research**

The importance of a well-crafted design, theoretically-sound constructs, and analysis with longitudinal data for college impact research is well documented (see Pascarella, 2006; Pascarella & Terenzini, 1991, 2005). For example, in their analysis on the use of propensity score matching techniques using longitudinal data, Padgett, Salisbury, An, and Pascarella (2010) – supported by emerging evidence (Shadish, Clark, & Steiner, 2008; Steiner, Cook, Shadish & Clark, in press) – conclude:

In secondary data, having theoretically vetted indicators that eliminates confounding influences in treatment assignment are essential for conducting...any statistical approach...In other words, the design of the study and its constructs trump any analytical technique. Methodologically strong longitudinal studies on college student experiences...with large sample sizes and extensive pretreatment measures allow for more extensive investigations into and controls for selection bias. (p. 22)

By controlling for potentially-biasing background characteristics and precollege experiences, I was able to more accurately measure organizational, programmatic, and pedagogical elements of in-college experiences that impact first-year students' ASR. Future research, particularly research that involves the survey design, must be cognizant of obtaining important precollege information that may potentially bias their intended outcome.

Furthermore, the longitudinal data on which this study is based enabled me to use a pretest-posttest design to examine the effects of specific in-college experiences on students' development of ASR during the first year of college. Using a pretreatment measure of ASR to control for students' precollege ASR is a potent element of this study's design. This feature refines the capacity of the analysis to better isolate and estimate the effects of in-college experiences on students' post-treatment ASR, measured at the end of the first year of college. Future research on the effects of specific in-college experiences on ASR and a wide range of other student outcomes could also benefit and obtain more unbiased estimates of effects by the use of pretest-posttest longitudinal designs akin to this key aspect of the present study's design.

In addition, this study supplements and highlights the growing evidence that good practices significantly impact college students' cognitive, psychosocial, and personal development (see Astin, 1993; Cruce et al., 2006; Goodman et al., 2006; Padgett et al.,

2010; Padgett et al., in press; Pascarella & Terenzini, 1991, 2005; Seifert et al., 2006).

While college impact studies continue to examine the effects of programmatic, curricular, and co-curricular experiences on student learning, it has become evident that college impact studies must incorporate measures of good practices to account for these important and influential features of the college experience. Findings from this study – and the studies highlighted above – provide enough evidence to suggest that examining the effects of college experiences only at the programmatic level is not enough to truly measure the extent to which students engage in intentionally meaningful and developmentally-productive practices. Yet, future research should not dismiss the impacts of other campus programs as mechanisms to increase students' ASR, including service learning, learning communities, senior capstones, and the like.

Lastly, this study examined the effects of the college experience on ASR for first-generation and non-first-generation students by running the analyses across each subsample. Future research is necessary to examine if the effects differ across other unique student groups, including minority students, SES, and gender. Findings from this study both support and contradict prior research on the effects of race on ASR. As the racial/ethnic composition of college enrollments continues to shift (Jamieson et al., 2001), it is imperative researchers examine the unique effects of race on ASR. Examining students' ASR development in college has meaningful and potentially large societal implications. As states and citizens hold colleges and universities accountable for public education funding, higher education would benefit from a holistic understanding of how college is impacting ASR development and the resulting external benefits that accrue to society.

### **Implications for Practice**

Concluding their qualitative examination of first-generation Latino students, Saunders and Serna (2004) state, “Without longitudinal studies that follow students from high school through college, very little information can be fed back to the K-12 system and to college access programs to make them more responsive to students’ need” (p. 161). The findings from this present study – particularly the effects of the good practices – can inform practitioners and faculty about significant programmatic and co-curricular experiences that positively affect first-year students’ ASR.

Intending to or having completed a study abroad experience significantly increases both first-generation and non-first-generation students’ ASR. This significant finding suggests that all first-year students, no matter their parents’ level of education, report higher levels of ASR if they intend to or have studied abroad. Identified as a key college outcome within the twenty-first century by AAC&U, global learning is particularly impactful because “major societal issues – whether environmental, economic, or political in nature – cannot be confined within national borders” (Leskes & Miller, 2006, p. 21). Though global learning requires a comprehensive approach to international studies, studying abroad is a meaningful and practical program for students to become involved with global and societal issues. A current challenge for campus practitioners is to provide these types of global experiences to more diverse students (see Leskes & Miller, 2006).

This study’s findings indicate that while plans to study abroad significantly and positively promote the development of ASR for both first-generation and non-first-generation students, the effect size is more than twice as large for first-generation

students than for their non-first-generation peers. In addition, the descriptive statistics suggest that first-generation students are substantially more likely than non-first-generation students to come from disadvantaged backgrounds in terms of SES. As such, additional funding and scholarships to study abroad should be made available – based on both merit-based and on need-based criteria – in order to adequately support diverse students who may not have the opportunity or resources necessary to experience these types of global opportunities. With the emergence of recent evidence about the factors that influence students’ plans to study abroad during college and the choice process behind this decision (Salisbury, Paulsen, & Pascarella, 2010; Salisbury, Umbach, Paulsen, & Pascarella, 2009), colleges and universities will have a clearer understanding of how to promote studying abroad as a beneficial co-curricular program. Because the impact of plans to study abroad on the development of ASR is much greater for first-generation students, and because they are more likely than their non-first-generation peers to lack the social and cultural capital – and other college-going resources and knowledge – to be aware of and pursue study abroad opportunities, colleges and universities should establish initiatives to target first-generation students with advising and other resources to particularly encourage their participation in study abroad opportunities.

Whereas studying abroad is a more programmatic initiative, one pedagogical approach that significantly increases both first-generation and non-first-generation students’ ASR is for classroom teachers to design learning activities that support and encourage students to practice the integration of ideas, information, and experiences in the classroom into the students’ everyday lives. While integrative learning incorporates

aspects of in-the-classroom and out-of-the-classroom experiences, successful integrative learning is often based within the students' discipline. Leskes & Miller (2006) posit that "Powerful learning occurs when the problems posed are unscripted, drawn from the outside world, without simple answers, and sufficiently broad to require information from multiple areas of knowledge" (p. 18). Incorporating cognitive activities that require complex problem solving in real world contexts in ways that incorporate learning of curricular content can effectively prepare students for real-world decisions and increase their awareness of diverse life circumstances, conditions and contexts. Administrators should provide resources for faculty development workshops and seminars in order to encourage their faculty and teaching assistants to integrate class exercises that challenge the student to learn more deeply and incorporate class material to solve complex problems, rather than recite their class readings and notes (e.g., see Weimer, 2002). Findings from this study suggest students' ASR increases when students can connect classroom learning to societal problems and issues. The challenge, however, is to "turn promising integrative learning innovations into coherent programs of study with progressively more rigorous expectations" (Leskes & Miller, 2006, p. 19). One such initiative is to utilize diversity experiences within the classroom.

First-year students' ASR increases when they participate in diversity experiences across campus. Though many campus activities and campus life offices strive to provide as many diversity activities for student as possible on campus, the extent to which students attend and participate is limited. The challenge of increasing student participation in diversity activities does not lie in marketing or promoting these activities, but rather in motivating students to attend. Students will not participate in any type of

activity unless the cost of participation is lower than the benefits of attending. In other words, students need some form of incentive to attend campus activities and events that promote diversity experiences. Similar to integrative learning, providing workshops and seminars to train and encourage faculty and teaching assistants to redesign their students' learning experiences to incorporate diversity experiences – and attending diversity events across campus – into the learning activities of their courses and curricula would provide clearly-structured incentives to motivate students to attend, such as a class grade or course credit. These types of pedagogical initiatives – in addition to teaching clarity and organization – help promote the development of students' ASR by providing students with the practical experiences needed to encourage learning related to social responsibility and societal issues.

As this study and prior research have illustrated, first-generation students who report interacting with faculty measure significantly lower across an array of learning outcomes. However, this study highlights an invaluable practice for faculty with regards to supporting and developing first-generation students' ASR. First-generation students who perceived faculty exhibiting high levels of teaching clarity and organization reported higher levels of ASR. This suggests that first-generation students' transition through higher education – and their ultimate development of ASR – can be supported by faculty who clearly present the course material in an organized manner. Utilizing sound pedagogical techniques and instruction within the classroom significantly fosters first-generation students' development of ASR.

### **Relationship of Results to Theory**

Both the conceptual and theoretical frameworks of this study identify the quantifiable background characteristics, precollege experiences and specific in-college experiences that can theoretically impact students' ASR. Whereas human capital theory posits that the development of ASR – such as volunteerism, community service, or civic engagement – are highly valued within society because of the substantial public or external benefits they provide; social capital theory suggests that altruism can be a cause and an outcome, where one's network of connections to relationships and norms and an individual's social environment can promote the development of altruism and social responsibility, yet altruistic and social responsible behavior can also be a means to generate more social capital; and cultural capital theory explains that cultural resources and knowledge, including altruism and social responsibility, are transferred across generations in home, school, college and other social environments, as a means of maintaining or advancing social status. Together, human, social, and cultural capital guide our understanding of students' own characteristics and perceptions, as well as the effects and outcomes of their involvement in and engagement with specific aspects of their college experiences. College impact research aims to identify and statistically control for the effects of precollege factors in order to better isolate and estimate the impact of curriculum, co-curriculum, and other specific college experiences on a given student outcome such as ASR, the outcome of focus in the present study.

The findings of this study clearly suggests that while background characteristics are valuable and necessary statistical controls, ASR is not necessarily just an inherited trait, but rather it is also an outcome affected by the student's environment and

engagement in a set of specific college experiences. For example, multiple effect sizes of being a minority student were significant and positive, and these significant effects are likely associated to the environment and exposure to various human, social, and cultural capital uniquely experienced by minority students. Similarly, prior research suggests that, in general, individuals from middle- and upper-class and highly-educated families are more likely to engage in altruistic and socially responsible activities (see Helliwell & Putnam, 2007; Nie et al., 1996; Putnam, 2000; Zukin et al., 2006). This research is partially explained within this study, as first-generation students who received a federal grant had significantly lower levels of ASR compared to their peers. Given the controls for the precollege ASR pretest measure in the models, other background characteristics – including gender, high school achievement, volunteering in high school, and the like – were non-significant across the models. In the context of the pretest-posttest longitudinal study of the development of ASR in this study, findings clearly illustrate the impactful and influential nature of specific aspects of the first-year college experience on the development of students' ASR during the first year of college.

Yet this study also indicates that the first-year experiences that significantly contribute to gains in ASR are not necessarily based only on traditional curricular or co-curricular experiences. Rather, of particular importance is students' participation in theoretically and statistically vetted good practices. Interestingly, typical measures of socialization in college – including student-faculty interactions, Greek membership, leadership positions, and the like – had either non-significant or significant minor effects on students' ASR. The first-year experiences that significantly and more substantially contributed to gains in ASR for both first-generation and non-first-generation students

include plans to or experience studying abroad, participation in learning opportunities that integrate ideas, information and experiences from classroom learning into practical life events, and diversity experiences in- and out-of-the-classroom. These patterns of findings reinforce the importance of accounting for good practices within college impact research. In addition, when it comes to the further construction of theories aiming to explain the development of students' ASR during the first and subsequent years of college, scholars should certainly consider reaching beyond the traditional programmatic features of the college experience to incorporate measures of more specific good practice in undergraduate education that may vary substantially according to students' perceptions of their experiences in broader programmatic contexts.

Finally, across the models estimated in this study, the largest effect sizes by far corresponded to the ASR pretest measure. Although the precollege ASR pretest was used primarily as a control measure in the present study, in order to better isolate and obtain more unbiased estimates of the effects of specific college experiences on students' development of ASR, these are findings of substantial theoretical importance. In the development of a more comprehensive theory of the development of ASR, the ways in which individual background characteristics and precollege experiences contribute to the early formation of ASR prior to college should be unfolded into its greater and fuller complexity in a two-stage theory of ASR development: the development of precollege ASR and the further development of ASR during the college years and beyond. Ultimately, this broader perspective may well be the most fruitful approach to the development of a comprehensive theory of both early and later development of ASR that considers the impacts of the early home, precollege school, and in-college experiences

and contextualizes the specific mechanisms at work in each phase to best explain and predict the evolution of an individuals' ASR.

### **Limitations**

As is the case with all college impact studies, it is also important to acknowledge that potential selection bias may exist within the sample. Students self-select to attend college. The students who enroll into postsecondary education are more likely to have high levels of human, social, and cultural capital, be highly motivated, exhibit leadership characteristics, participate in altruistic behaviors, and have higher levels of personal development. Having both pretest and posttest measures of altruism in the present study allows for a more accurate measure of growth or development in altruism over the first year of college and for more accurate estimates of the effects of in-college educational experiences on altruism. In addition, given that the WNS data currently examines only the first year of college, the data does not allow for discernable generalizations comparing the impact of the first year with the overall four-year college experience.

The analyses for this study were conducted using secondary-data. This directly limits the extent to which I could construct and incorporate specific survey-items to accurately assess the effects on ASR of all potentially relevant covariates as guided by prior research. As previously detailed, the primary purpose of the WNS is to investigate the effects of liberal arts colleges and experiences on outcomes associated with a liberal arts education. To this end, liberal arts colleges were specifically targeted for participation in the study and are therefore purposefully oversampled within the WNS institutional data. The oversample of liberal arts colleges – which are typically selective in their admission procedures – may indirectly affect and reduce the number of first-

generation students in my analytical sample, compared to other multi-institutional national datasets. To compensate for this limitation, three separate cohorts were combined to increase the number of first-generation students in the analytical sample for this study. Furthermore, the overpopulation of first-year students from small liberal arts colleges could potentially overestimate the effects of the liberal arts experience on students' ASR, perhaps due to a greater likelihood for meaningful socialization at such institutions (Pascarella, Wolniak, Cruce, & Blaich, 2004; Seifert, Pascarella, Goodman, Salisbury, & Blaich, 2008). To account for any potential bias in this regard, I performed a series of statistical procedures and incorporated statistical adjustments to control for the nested nature of the data, commonly referred to as the clustering effect.

The current form of the WNS used in this analysis is a longitudinal study of the first-year experience, so that the scope of this analysis is delimited to exploring the impact of aspects of the first year of college rather than the impact of the entire four-year collegiate experience. However, the first-year experience is considered to be the most influential and impactful year of college. Understanding the effects of the first-year experiences on various learning outcomes (i.e., altruistic behavior and social responsibility) provides contextual evidence of student development through higher education.

Finally, this analysis purposefully examined methodologically-appropriate first-generation and non-first-generation subsamples. As such, this study specifically defined first-generation students as students whose parent(s) has not attended a postsecondary institution (see Definition of Terms in chapter one for a more detailed operational definition). Families cannot be assumed to consist of two biological parents (Thomas &

Quinn, 2007). The phrasing of the question within WNS pertaining to level of mother and father's level of education assumes the respondent either 1) has a biological parent(s) to reference, or 2) substituted legal guardian or step-parent for biological parent when responding. Because step-families or any legal guardians, much like biological parents, can influence college-going students' capital, this is likely only a minor limitation.

### **Conclusion**

To the best of my knowledge, this is the first study to examine the effects of the first year of college on students' development of ASR. The findings from this study suggest that first-year students' experiences and engagement in college – in particular, theoretically vetted good practices – are particularly influential in the development of ASR. Furthermore, race/ethnicity and receiving a federal grant exposed important social and cultural differences that exist and ultimately influence ASR. These findings provide powerful evidence that the students' precollege exposure to human, social, and cultural capital, the college environment, and the purposeful good practices fostered within and outside the classroom, can significantly impact first-year students' ASR. Further, this study provides a holistic understanding of how colleges and universities are impacting first-year students ASR development and the resulting external benefits that may accrue to society, ultimately providing legitimacy for the continued funding of higher education by society.

APPENDIX  
OPERATIONAL DEFINITIONS FOR  
DEPENDENT AND INDEPENDENT MEASURES

*Measure/Description*

---

**Dependent Measure**

*Altruism and Social Responsibility:* Student's end of the first-year score identifying how important it is for them to be involved socially and politically in the community. This eleven-item scale in which respondent's self-reported (ranging from not important to essential) involvement in such activities or goals, including: 1) How important to respondent personally is volunteering in my community, 2) How important to respondent personally is becoming a community leader, 3) How important to respondent personally is becoming involved in activities that preserve and enrich the environment, 4) How important to respondent personally is helping others who are in difficulty, 5) How important to respondent personally is improving respondent's understanding of other countries and cultures, 6) How important to respondent personally is keeping up to date with political affairs, 7) How important to respondent personally is influencing the political structure, 8) How important to respondent personally is helping to promote racial understanding, 9) How important to respondent personally is influencing social values, 10) How important to respondent personally is integrating spirituality into respondent's life, and 11) How important to respondent personally is developing a meaningful philosophy of life. The internal consistency reliability for the scale is  $\alpha = 0.83$ .

**Precollege Control Measures**

*Received Federal Grant:* Respondent has federal grant: 1 = Yes, 0 = No.

*Number of Siblings:* Based upon the beginning of the first-year, how many brothers and sisters does the respondent have? 0 = No siblings, 1 = 1 sibling, 2 = 2 siblings, 3 = 3 siblings, or 4 = 4 or more siblings.

*Race/Ethnicity:* Four separate dichotomous measures of respondent's self-reported race/ethnicity: 1 = Black, 0 = White; 1 = Hispanic, 0 = White; 1 = Asian/Pacific Islander, 0 = White; and 1 = Other, 0 = White.

*High School Racial Composition:* The racial composition of respondent's high school was almost all white. 1 = Yes, 0 = No.

*Openness to Diversity/Challenge:* Respondent's mean-based scale of precollege

openness to diversity/challenge. This seven-item scale in which respondent's self-reported (ranging from strongly disagree to strongly agree) involvement in such activities, including 1) The extent to which respondent enjoys having discussions with people whose ideas and values are different from their own, 2) The extent to which respondent believes that the real value of a college education lies in being introduced to different values, 3) The extent to which respondent enjoys talking with people who have values different from theirs because it helps better understand self and values, 4) The extent to which respondent believes that learning about people from different cultures is a very important part of their college education, 5) The extent to which respondent enjoys taking courses that challenge their beliefs and values, 6) The extent to which courses respondent enjoys most are those that make them think about things from a different perspective, and 7) Extent to which respondent believes that contact with individuals whose backgrounds (e.g., race, national origin, sexual orientation) are different from one's own is an essential part of their college education. The internal consistency reliability for the scale is  $\alpha = 0.83$ .

*English is Second Language:* English is respondent's secondary language. 1 = Yes, 0 = No.

*Gender:* 1 = Male, 0 = Female.

*ACT Composite Score:* Respondent's common metric of precollege academic ability with imputations.

*Academic Motivation:* Respondent's mean-based scale of precollege academic motivation. This eight-item scale in which respondent's self-reported (ranging from strongly disagree to strongly agree) their academic motivation, including 1) The extent to which respondent is willing to work hard in a course to learn the material even if it will not lead to a higher grade, 2) The extent to which respondent does well on a test because they are well-prepared not because the test is easy, 3) The extent to which in high school respondent frequently did more reading in a class than was required simply because it interested them, 4) The extent to which in high school respondent frequently talked to teachers outside of class about ideas presented during class, 5) The extent to which getting the best grades respondent can is very important to them, 6) The extent to which respondent enjoys the challenge of learning complicated new material, 7) The extent to which respondent agrees that academic experiences (i.e., courses, labs, studying, discussions with faculty) will be the most important part of college, and 8) The extent to which respondent agrees that academic experiences (i.e., courses, labs, studying, discussions with faculty) will be the most enjoyable part of college. The internal consistency reliability for the scale is  $\alpha = 0.69$ .

*Volunteered during High School:* Within the last year, did the respondent volunteer in high school? 1 = Occasionally/Often/Very Often, 0 = Rarely/Never.

*Pretest Altruism and Social Responsibility:* Respondent's beginning of the first-year score identifying how important it is for them to be involved socially and politically in the community. This eleven-item scale in which respondent's self-reported (ranging from not important to essential) involvement in such activities or goals, including: 1) How important to respondent personally is volunteering in my community, 2) How important to respondent personally is becoming a community leader, 3) How important to respondent personally is becoming involved in activities that preserve and enrich the environment, 4) How important to respondent personally is helping others who are in difficulty, 5) How important to respondent personally is improving respondent's understanding of other countries and cultures, 6) How important to respondent personally is keeping up to date with political affairs, 7) How important to respondent personally is influencing the political structure, 8) How important to respondent personally is helping to promote racial understanding, 9) How important to respondent personally is influencing social values, 10) How important to respondent personally is integrating spirituality into respondent's life, and 11) How important to respondent personally is developing a meaningful philosophy of life. The internal consistency reliability for the scale is  $\alpha = 0.80$ .

### **College Experience Measures**

*Institutional Type:* The institutional type of each college and university from which the respondents were sampled, recoded into the following dichotomous categories: 1) Regional college and 2) Research university. Liberal Arts college was the omitted category.

*First-Year Grades:* Respondent's grades up to the point of taking the survey. 1 = C- or lower, 2 = C, 3 = C+, 4 = B-, 5 = B, 6 = B+, 7 = A-, and 8 = A.

*Humanities Courses:* The number of humanity courses respondent participated in during the first year, based on a continuous scale ranging from '0' to '5'.

*Social Science Courses:* The number of social science courses respondent participated in during the first year, based on a continuous scale ranging from '0' to '5'.

*Natural Science Courses:* The number of natural science courses respondent participated in during the first year, based on a continuous scale ranging from '0' to '5'.

*Live On-Campus:* Does the respondent live on-campus? 1 = Live on-campus, 0 = Live off-campus.

*Greek Membership:* Is the respondent a member of a social fraternity or sorority? 1 = Yes, 2 = No.

*Total Hours Work in College:* The number of hours per week the respondent works for

pay on-campus and/or off-campus (using the midpoints of a categorical variable): 1 = 0, 2 = 2.5, 3 = 8, 4 = 13, 5 = 18, 6 = 23, 7 = 28, and 8 = 45+.

*Relaxing and Socializing*: Number of hours per week respondent spends relaxing and socializing (using the midpoints of a categorical variable): 1 = 0, 2 = 2.5, 3 = 8, 4 = 13, 5 = 18, 6 = 23, 7 = 28, and 8 = 45+.

*Study Abroad*: Respondent has studied abroad (or plans to before graduation). 1 = Yes, 0 = No.

*Leadership Position*: Respondent held a leadership position in a student club, campus organization, residence hall, or fraternity/sorority. 1 = Yes, 0 = No.

*Attended the Arts*: During current school year, how often respondent attended an art exhibit, gallery, play, dance, or other theater performance? 0 = Never, 1 = Sometimes, 2 = Often, and 3 = Very Often.

### **Measures of Good Practices**

*Quality of Nonclassroom Interactions with Faculty*: Five-item scale, including 1) The extent respondent agrees that non-classroom interactions with faculty have had a positive influence on personal growth, values, and attitudes, 2) The extent respondent agrees that non-classroom interactions with faculty have had a positive influence on intellectual growth and interest in ideas, 3) The extent respondent agrees that non-classroom interactions with faculty have had a positive influence on career goals and aspirations, 4) The extent respondent agrees that since coming to this institution, respondent has developed a close, personal relationship with at least one faculty member, and 5) The extent respondent agrees that respondent is satisfied with the opportunities to meet and interact informally with faculty members. The internal consistency reliability for this scale is  $\alpha = 0.85$ .

*Prompt Feedback from Faculty*: Three-item scale, including 1) How often faculty informed respondent of level of performance in a timely manner, 2) During current school year, how often has respondent received prompt written or oral feedback from faculty on academic performance, and 3) How often faculty checked to see if respondent had learned the material well before going on to new material. The internal consistency reliability for this scale is  $\alpha = 0.68$ .

*Teaching Clarity and Organization*: Ten-item scale, including 1) Frequency that faculty gave clear explanations, 2) Frequency that faculty made good use of examples and illustrations to explain difficult points, 3) Frequency that faculty effectively reviewed and summarized the material, 4) Frequency that faculty interpreted abstract ideas and theories clearly, 5) Frequency that faculty gave assignments that helped in learning the course material, 6) Frequency that the presentation of material was well

organized, 7) Frequency that faculty were well prepared for class, 8) Frequency that class time was used effectively, 9) Frequency that course goals and requirements were clearly explained, and 10) Frequency that faculty had a good command of what they were teaching. The internal consistency reliability for this scale is  $\alpha = 0.89$ .

*Degree of Positive Peer Interactions:* Eight-item scale, including 1) Respondent has developed close personal relationships with other students, 2) The student friendships respondent has developed at this institution have been personally satisfying, 3) Interpersonal relationships with other students have had a positive influence on respondent's personal growth, attitudes, and values, 4) Interpersonal relationships with other students have had a positive influence on respondent's intellectual growth and interest in ideas, 5) Respondent's quality of relationships with other students, 6) It has been difficult for respondent to meet and make friends with other students (reverse-coded), 7) Few of the students respondent knows would be willing to listen to and help them with a personal problem (reverse-coded), and 8) Most students at this institution have values and attitudes different from respondent (reverse-coded). The internal consistency reliability for this scale is  $\alpha = 0.87$ .

*Cooperative Learning:* Four-item scale, including 1) In respondent's classes, students taught each other in addition to faculty teaching, 2) Faculty encouraged respondent to participate in study groups outside of class, 3) Respondent participated in one or more study group(s) outside of class, and 4) During current school year, how often has respondent worked with other students on projects outside of class. The internal consistency reliability for this scale is  $\alpha = 0.70$ .

*Integrated Ideas, Information, and Experiences:* Four-item scale, including 1) The extent respondent agrees that courses have helped them understand the historical, political, and social connections of past events, 2) The extent respondent agrees that courses have helped them see the connections between intended career and how it affects society, 3) The extent respondent agrees that out-of-class experiences have helped them connect what was learned in the classroom with life events, and 4) The extent respondent agrees that out-of-class experiences have helped them translate knowledge and understanding from the classroom into action. The internal consistency reliability for this scale is  $\alpha = 0.74$ .

*Diversity Experiences:* Six-item scale, including 1) How often respondent attended a debate or lecture on a current political/social issue during this academic year, 2) How often respondent had serious discussions with staff whose political, social, or religious opinions were different from own, 3) Extent to which respondent's institution emphasizes encouraging contact among students from different economic, social, and racial or ethnic backgrounds, 4) During current school year, how often has respondent had serious conversations with students of a different race or ethnicity than their own, 5) During current school year, how often have respondent had serious conversations with students who are very different from theirs in terms of their religious beliefs, political opinions, or personal values, and 6) How often respondent participated in a racial or cultural awareness workshop during this academic year. The internal

consistency reliability for this scale is  $\alpha = 0.65$ .

*Course-Related Diversity Experiences*: Three-item scale, including 1) Number of courses focusing on diverse cultures and perspective respondent has taken during this academic year, 2) Number of courses focusing on women's/gender studies respondent has taken during this academic year, and 3) Number of courses focusing on issues of equality and/or social justice respondent has taken during this academic year. The internal consistency reliability for this scale is  $\alpha = 0.68$ .

---

## REFERENCES

- Allison, P. D. (1999). *Multiple regression: A primer*. Thousand Oaks, CA: Pine Forge Press.
- Allison, P. D. (2001). *Missing data*. Thousand Oaks, CA: Sage.
- Astin, A.W. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Astin, A. W., & Lee, J. J. (2003). How risky are one-shot cross-sectional assessments of undergraduate students? *Research in Higher Education*, 44(6), 657-672.
- Attewell, P., & Lavin, D. E. (2007). *Passing the torch: Does higher education for the disadvantaged pay off across the generations?* New York, NY: Russell Sage Foundation.
- Baum, S. (2004). *A primer on economics for financial aid professionals*. New York, NY: College Board.
- Baum, S., & Payea, K. (2004) *Education pays: The benefits of higher education for individuals and society*. New York, NY: College Board.
- Becker, G. S. (1975). *Human capital: A theoretical and empirical analysis, with special reference to education* (2<sup>nd</sup> ed.). New York, NY: Columbia University Press.
- Bourdieu, P. (1977). Cultural reproduction and social reproduction. In J. Karabel, & A. H. Halsey (Eds.), *Power and ideology in education* (pp. 487-511). New York, NY: Oxford University Press.
- Bowen, H. R. (1977). *Investment in learning: The individual and social value of American higher education*. San Francisco, CA: Jossey-Bass.
- Bowman, N. A., Brandenberger, J. W., Hill, P. L., & Lapsley, D. K. (in press). The long-term effects of college diversity experiences: Well-being and social concerns 13 years after graduation. *Journal of College Student Development*.
- Bowman, N., Brandenberger, J., Lapsley, D., Hill, P., & Quaranto, J. (2010). Serving in college, flourishing in adulthood: Does community engagement during the college years predict adult well-being? *Applied Psychology: Health and Well-Being*, 2(1), 14-34.
- Bui, K. V. T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experiences. *College Student Journal*, 36(1), 3-11.

- Bui, K. V. T. (2005). Middle school variables that predict college attendance for first-generation students. *Education, 126*, 203-220.
- Card, D. (1999). The causal effect of education on earnings. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* (Vol. 3, pp.1802-1863). Amsterdam, The Netherlands: North-Holland.
- Ceja, M. (2006). Understanding the role of parents and siblings as information sources in the college choice process of Chicana students. *Journal of College Student Development, 47*, 87-104.
- Chen, X., & Carroll, C. D. (2005). *First-generation students in postsecondary education: A look at their college transcripts* (National Center for Education Statistics Rep. No. 2005-171). Washington, DC: U.S. Department of Education.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin, 39*(7), 3-7.
- Chickering, A. W., & Gamson, Z. F. (1991). Applying the seven principles for good practice in higher education. *New Directions for Teaching and Learning, 1991*(47), 1-104.
- Colby, A., Ehrlich, T., Beaumont, E., & Stephens, J. (2003). *Educating citizens: Preparing America's undergraduates for lives of moral and civic responsibility*. San Francisco, CA: Jossey-Bass.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology, 94*, S95-S120.
- Cruce, T. M., Wolniak, G. C., Seifert, T. A., & Pascarella, E. T. (2006). Impacts of good practices on cognitive development, learning orientations, and graduate degree plans during the first year of college. *Journal of College Student Development, 47*(4), 365-383.
- Davis, J. (2010). *The first-generation student experience: Implications for campus practice, and strategies for improving persistence and success*. Sterling, VA: Stylus Publishing, LLC.
- Dee, T. (2004). Are there civic returns to education? *Journal of Public Economics, 88*, 1697-1720.
- Dekker, P. (2004). Social capital of individuals: Relational asset or personal quality? In S. Prakash & P. Selle (Eds.), *Investigating social capital: Comparative perspectives on civil society, participation and governance* (pp. 88-110). New York: NY, Sage.

- Dennis, J. M., Phinney, J. S., & Ivey-Chuateco, L. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development*, 46, 223-236.
- Duggan, M. (2001). *Factors influencing the first-year persistence of first generation college students*. Paper presented at the annual meeting of the North East Association for Institutional Research, Cambridge, MA.
- Dumais, S. A. (2002). Cultural capital, gender, and school success: The role of habitus. *Sociology of Education*, 75(1), 44-68.
- Fernandez Kelly, P. (2002). Commentary: Uses and misuses of social capital in studying school attainment. In B. Fuller & E. Hannum (Eds.), *Schooling and social capital in diverse cultures* (pp. 73-83). Kidlington, Oxford: Elsevier Science Ltd.
- Field, J. (2008). *Social capital* (2<sup>nd</sup> ed.). New York, NY: Routledge.
- Franklin, V. P. (2004). Social capital, cultural capital, and the challenge of African American education in the 21<sup>st</sup> century. In V. P. Franklin & C. J. Savage (Eds.), *Cultural capital and black education: African American communities and the funding of black schooling, 1865 to the present* (pp. 159-171). Greenwich, CT: Information Age Publishing.
- Galston, W. A. (2005). Civic education and political participation. In V. V. Gehring (Ed.), *Community matters: Challenges to civic engagement in the 21<sup>st</sup> century* (pp. 23-31). Lanham, MD: Rowman & Littlefield Publishers, Inc.
- Gibbons, M. M., & Shoffner, M. F. (2004). Prospective first-generation college students: Meeting their needs through social cognitive career theory. *Professional School Counselors*, 8, 91-97.
- Glaeser, E. L. (2001). The formation of social capital. *The contribution of human and social capital to sustained economic growth and well-being: International Symposium Report* (pp. 381-393). Hull, Quebec: Human Resources Development Canada.
- Goodman, K. M., Seifert, T. A., Jorgensen, J. D., Pascarella, E. T., Wolniak, G. C., Blaich, C. F., ... & Schneider, C. G. (2006, November). *How do race and socioeconomic background influence experiences of good practices in undergraduate education?* Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Anaheim, CA.
- Gunaratne, L. (1985). Human capital and distribution of personal income: A theoretical analysis and an examination of some aspects of income distribution in Sri Lanka. Colombo: Central Bank Press.

- Harrell, P. E., & Forney, W. S. (2003). Ready or not, here we come: Retaining Hispanic and first-generation students in postsecondary education. *Community College Journal of Research and Practice*, 27, 147-156.
- Helliwell, J. F., & Putnam, R. D. (2007). Education and social capital. *Eastern Economic Journal*, 33(1), 1-19.
- Hill, P. L., Burrow, A. L., Brandenberger, J. W., Lapsley, D. K., & Quaranto, J. C. (in press). Collegiate purpose orientations and well-being in early and middle adulthood. *Journal of Applied Development Psychology*.
- Institute for Higher Education Policy (1998). *Reaping the benefits: Defining the public and private value of going to college*. Washington, D.C.: Institute for Higher Education Policy.
- Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *The Journal of Higher Education*, 77, 861-885.
- Jamieson, A., Curry, A., & Martinez, G. (March, 2001). School enrollment in the United States – Social and economic characteristics of students. *U.S. Census Bureau, Current Population Reports (P20-533)*. Washington, D.C.
- Jeannotte, M. S. (2003). Singing alone? The contribution of cultural capital to social cohesion and sustainable communities. *The International Journal of Cultural Policy*, 9(1), 35-49.
- Kao, G. (2002). Ethnic differences in parents' educational aspirations. In B. Fuller, & E. Hannum (Eds.), *Schooling and social capital in diverse cultures* (pp. 85-103). Kidlington, Oxford: Elsevier Science Ltd.
- Kerr, C. (2001). *The uses of the university* (5th ed.). Cambridge, MA: Harvard University Press.
- Kolm, S. C. (2006). Introduction to the economics of giving, altruism, and reciprocity. In S. C. Kolm & J. Mercier Ythier (Eds.), *Handbook of the economics of giving, altruism and reciprocity foundations* (Vol. 1, pp. 1-122). Oxford, UK: Elsevier B. V.
- Kuh, G. D. (1995). The other curriculum: Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education*, 66(2), 123-155.
- Kuh, G. (2001). Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change*, 33(3), 10–17, 66.

- Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990's. *Review of Higher Education, 24*(3), 309-332.
- Lee, J. J., Sax, L. J., Kim, K. A., & Hagedorn (2004). Understanding students' parental education beyond first-generation status. *Community College Review, 32*(1), 1-20.
- Leskes, A. & Miller, R. (2006). *Purposeful pathways: Helping students achieve key learning outcomes*. Washington, DC: Association of American Colleges & Universities.
- Leslie, L. L., & Brinkman, P. T. (1988). *The economic value of higher education*. New York, NY: Macmillan Publishing Company.
- Loes, C., Pascarella, E., & Umbach, P. (in press). Effects of diversity experiences on critical thinking skills: Who benefits? *Journal of Higher Education*.
- Lohfink, M., & Paulsen, M. B. (2005). Comparing the determinants of persistence for first-generation and continuing-generation students. *Journal of College Student Development, 46*, 409-428.
- Lundberg, C. A., & Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis of student race/ethnicity. *Journal of College Student Development, 45*(5), 549-565.
- McDonough, P. M. (1997). *Choosing college: How social class and schools structure opportunity*. Albany, NY: State University of New York Press.
- McKean, R. N. (1975). Economics of trust, altruism, and corporate responsibility. In E. S. Phelps (Ed.), *Altruism, morality, and economic theory* (pp. 29-44). New York, NY: Russell Sage Foundation.
- McMahon, W. W. (2009). *Higher learning, greater good: The private and social benefits of higher education*. Baltimore, MD: The Johns Hopkins University Press.
- Misa, K., Anderson, J., & Yamamura, E. (2005). The lasting impact of college on young adults' civic and political engagement. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Philadelphia, PA.
- Myers, R. (1990). *Classical and modern regression with applications* (2nd ed.). Boston: Duxbury Press.
- National Center for Education Statistics (2009). *Projections of education statistics to 2018. Table 22. Actual and projected numbers for enrollment in all degree-granting postsecondary institutions, by race/ethnicity: Fall 1993 through fall 2018*, from, [http://nces.ed.gov/programs/projections/projections2018/tables/table\\_22.asp?referrer=list](http://nces.ed.gov/programs/projections/projections2018/tables/table_22.asp?referrer=list)

- Newman, P. R., & Newman, B. M. (1976). Early adolescence and its conflict: Group identity versus alienation, *Adolescence*, 11(42), 261-274.
- Nie, N. H., Junn, J., & Stehlik-Barry, K. (1996). *Education and Democratic Citizenship in America*. Chicago, IL: The University of Chicago Press.
- Osborne, M., Sankey, K., & Wilson, B. (2007). Introduction. In M. Osborne, K. Sankey, & B. Wilson (Eds.), *Social capital, lifelong learning and the management of place* (pp. 1-14). New York, NY: Routledge.
- Pace, C. R. (1974). *Demise of diversity: A comparative profile of eight types of institutions*. New York, NY: McGraw-Hill.
- Padgett, R. D., Goodman, K. M., Johnson, M. P., Saichaie, K., Umbach, P. D., & Pascarella, E. T. (2010). The impact of college student socialization, social class, and race on need for cognition. *New Directions for Institutional Research* (no. 145) - *Diversity and educational benefits: Expanding the scope, deepening our understanding* (pp. 99-111). San Francisco, CA: Jossey-Bass.
- Padgett, R. D., Johnson, M. P., & Pascarella, E. T. (in press). First-generation undergraduate students and the impacts of the first year of college: Some additional evidence. *Journal of College Student Development*.
- Padgett, R.D., Salisbury, M. H., An, B. P., & Pascarella, E. T. (2010). Required, practical, or unnecessary? An examination and demonstration of propensity score matching using longitudinal secondary data. *New Directions for Institutional Research – Assessment Supplement* (pp. 29-42). San Francisco, CA: Jossey-Bass.
- Pascarella, E. T. (1985). College environmental influences on learning and cognitive development: A critical review and synthesis. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 1, pp. 1-61). New York: Agathon Press, Inc.
- Pascarella, E. T. (2006). How college affects students: Ten directions for future research. *Journal of College Student Development*, 47(5), 508-520.
- Pascarella, E., Cruce, T., Umbach, P., Wolniak, G., Kuh, G., Carini, R., ...& Zhao, C. (2006). Institutional selectivity and good practices in undergraduate education: How strong is the link? *Journal of Higher Education*, 77, 251-285.
- Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *Journal of Higher Education*, 75, 249-284.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco, CA: Jossey-Bass.

- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of Research* (Vol. 2). San Francisco, CA: Jossey-Bass.
- Pascarella, E. T., Wolniak, G. C., Cruce, T. M., & Blaich, C. F. (2004). Do liberal arts colleges really foster good practices in undergraduate education? *Journal of College Student Development*, 45(1), 57-74.
- Pascarella, E., Wolniak, G., & Pierson, C. (2003). Explaining student growth in college when you don't think you are. *Journal of College Student Development*, 44, 122-126.
- Paulsen, M. B. (2001a). The economics of human capital and investment in higher education. In M. B. Paulsen & J. C. Smart (Eds.), *The finance of higher education: Theory, research, policy & practice* (pp. 55-94). New York, NY: Agathon Press.
- Paulsen, M. B. (2001b). The economics of the public sector: The nature and role of public policy in the finance of higher education. In M. B. Paulsen & J. C. Smart (Eds.), *The finance of higher education: Theory, research, policy & practice* (pp. 95-132). New York, NY: Agathon Press.
- Paulsen, M. B., & Toutkoushian, R. K. (2007a). Overview of economic concepts, models, and methods for institutional research. In R. K. Toutkoushian & M. B. Paulsen (Eds.), *New Directions for Institutional Research (no. 132): Applying economics to institutional research* (pp. 5-24). San Francisco, CA: Jossey-Bass.
- Paulsen, M. B., & Toutkoushian, R. K. (2007b). Economics and institutional research: Expanding the connections and applications. In R. K. Toutkoushian & M. B. Paulsen (Eds.), *New Directions for Institutional Research (no. 132): Applying economics to institutional research* (pp. 95-103). San Francisco, CA: Jossey-Bass.
- Paulsen, M. B., & Toutkoushian, R. K. (2008). Economic models and policy analysis in higher education: A diagrammatic exposition. In J. C. Smart (ed.), *Higher education: Handbook of theory and research*, Vol. 23. (pp. 1-48). Dordrecht, The Netherlands: Springer.
- Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *The Journal of Higher Education*, 76(5), 485-518.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon & Schuster Paperbacks.

- Putnam, R. D. (2001). Social capital – Measurement and consequences. In J. F. Helliwell (Ed.), *The contribution of human and social capital to sustained economic growth and well-being: International symposium report* (pp. 117-135). Hull, Quebec: Human Resources Development Canada.
- Putnam, R. D., & Feldstein, L. M. (2003). *Better together: Restoring the American community*. New York, NY: Simon & Schuster.
- Rendon, L. I. (1995). *Facilitating retention and transfer for first generation students in community colleges*. Paper presented at the New Mexico Institute Rural Community College Initiative, Espanola, NM.
- Riordan, C. (1997). *Equality and achievement: An introduction to the sociology of education*. New York, NY: Addison-Wesley Educational Publishers Inc.
- Saenz, V. B., Hurtado, S., Barrera, D., Wolf, D., & Yeung, F. (2007). *First in my family: A profile of first-generation college students at four-year institutions since 1971*. Los Angeles, CA: Higher Education Research Institute, UCLA.
- Salisbury, M. H., Paulsen, M. B., & Pascarella, E. T. (2010). To see the world or stay at home: Applying an integrated student choice model to explore the gender gap in the intent to study abroad. *Research in Higher Education, 51*, 615-640.
- Salisbury, M. H., Umbach, P. D., Paulsen, M. B., & Pascarella, E. T. (2009). Going global: Understanding the choice process of the intent to study abroad. *Research in Higher Education, 50*, 119-143.
- Saunders, M., & Serna, I. (2004). Making college happen: The college experiences of first-generation Latino students. *Journal of Hispanic Higher Education, 3*(2), 146-163.
- Schokkaert, E. (2006). The empirical analysis of transfer motives. In S. C. Kolm & J. Mercier Ythier (Eds.), *Handbook of the economics of giving, altruism and reciprocity foundations* (Vol. 1, pp. 127-181). Oxford, UK: Elsevier B. V.
- Schubert, J. N., & Tweed, M. J. (2004). Ethnic diversity, population size, and charitable giving at the local level in the United States. In F. Salter (Ed.), *Welfare, ethnicity and altruism: New findings and evolutionary theory* (pp. 53-73). Portland, OR: Frank Cass Publishers.
- Schuller, T. (2001). The complementary roles of human and social capital. In J. F. Helliwell (Ed.), *The contribution of human and social capital to sustained economic growth and well-being: International Symposium Report* (pp. 89-105). Hull, Quebec: Human Resources Development Canada.

- Schultz, T. W. (1971a). *Investment in human capital: The role of education and of research*. New York, NY: The Free Press.
- Schultz, T. W. (1971b). Investment in human capital. In B.F. Kiker (Ed.), *Investment in human capital* (pp. 3-21). Columbia, SC: University of South Carolina Press.
- Seifert, T. A., Drummond, J., & Pascarella, E. T. (2006). African-American students' experiences of good practices: A comparison of institutional type. *Journal of College Student Development, 47*(2), 185-205.
- Seifert, T. A., Pascarella, E. T., Goodman, K. M., Salisbury, M. H., & Blaich, C. F. (2008, November). *Liberal arts colleges and good practices in undergraduate education: Additional evidence*. Paper presented at the annual meeting of the Association for the Study of Higher Education, Jacksonville, FL.
- Shadish, W. R., Clark, M. H., & Steiner, P. M. (2008). Can nonrandomized experiments yield accurate answers? A randomized experiment comparing random and nonrandom assignments. *Journal of the American Statistical Association, 103*, 1334-1356.
- Shapiro, H. T. (2005). *A larger sense of purpose: Higher education and society*. Princeton, NJ: Princeton University Press.
- Smith, E. S. (1999). The effects of investments in the social capital of youth on political and civic behavior in young adulthood: A longitudinal analysis. *Political Psychology, 20*(3), 553-580.
- Somers, P., Woodhouse, S., & Cofer, J. (2004). Pushing the boulder uphill: The persistence of first-generation college students. *NASPA Journal, 41*, 418-435.
- Sorcinelli, M. D. (1991). Research findings on the seven principles. *New Directions for Teaching and Learning, 47*, 13-23.
- Steiner, P. M., Cook, T. D., Shadish, W. R., & Clark, M. H. (in press). The importance of covariate selection in controlling for selection bias in observational studies. *Psychological Methods*.
- Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4<sup>th</sup> ed.). Hillsdale, NJ: Erlbaum.
- Stolle, D. (2003). The sources of social capital. In M. Hooghe & D. Stolle (Eds.), *Generating social capital: Civil society and institutions in comparative perspective* (pp. 19-42). New York, NY: Palgrave MacMillan.
- Strayhorn, T. L. (2006). Factors influencing the academic achievement of first-generation college students. *NASPA Journal, 43*, 82-111.

- Taubman, P., & Wales, T. (1974). *Higher education and earnings: College as an investment and a screening device*. New York, NY: McGraw-Hill Book Company.
- Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education*, 37(1), 1-22.
- Thelin, J. R. (2004). *A history of American higher education*. Baltimore, MD: The Johns Hopkins University Press.
- Tierney, W. G., Corwin, Z. B., & Coylar, J. E. (2005). *Preparing for college: Nine elements of effective outreach*. Albany, NY: SUNY Press.
- Thomas, L., & Quinn, J. (2007). *First generation entry into higher education: An international study*. New York, NY: Open University Press.
- Thurow, L. C. (1970). *Investment in human capital*. Belmont, CA: Wadsworth Publishing Company, Inc.
- Ting, S. M. (2003). A longitudinal study of non-cognitive variables in predicting academic success of first-generation college students. *College and University*, 78(4), 27-31.
- Toutkoushian, R. K. (2006). Economic contributions to institutional research on faculty. In R. K. Toutkoushian & M. B. Paulsen (Eds.), *New directions for institutional research: Applying economics to institutional research* (pp. 75-93). San Francisco, CA: Jossey-Bass.
- U.S. Census Bureau (2004). *U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin*, from <http://www.census.gov/ipc/www/usinterimproj>
- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Education and Psychological Measurement*, 52, 1003-1017.
- Vine, P. (1976). The social function of eighteenth-century higher education. *History of Education Quarterly*, 16, 409-424.
- Warburton, E. C., Bugarin, R., & Nunez, A. (2001). *Bridging the gap: Academic preparation and postsecondary success of first-generation students* (National Center for Education Statistics Rep. No. 2001-153). Washington, D.C.: U.S. Department of Education.

- Weidman, J. (1989). Undergraduate socialization: A conceptual approach. In J. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 5, pp. 289-322). New York: Agathon.
- Weimer, M. (2002). *Learner-centered teaching: Five key changes to practice*. San Francisco, CA: Jossey-Bass.
- Weisbrod, B. A. (1971). Education and investment in human capital. In B.F. Kiker (Ed.), *Investment in human capital* (pp. 228-253). Columbia, SC: University of South Carolina Press.
- Whitt, E. J., Edison, M., Pascarella, E. T., Nora, A., & Terenzini, P. T. (1999). Interactions with peers and objective and self-reported cognitive outcomes across three years of college. *Journal of College Student Development*, 40(1), 61-78.
- Wong, R. S. K. (2002). Commentary: Cultural and social capital in educational research. In B. Fuller & E. Hannum (Eds.), *Schooling and social capital in diverse cultures* (pp. 161-169). Kidlington, Oxford: Elsevier Science Ltd.
- Zukin, C., Keeter, S., Andolina, M., Jenkins, K., & Carpini, M. X. D. (2006). *A new engagement? Political participation, civic life, and the changing American citizen*. New York, NY: Oxford University Press, Inc.