A Dissertation

entitled

Does Faith-Based Worldview Predict Confidence in College Major:

A Quantitative Longitudinal Study at the University of Michigan

by

Kristy Taylor

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Doctor of Philosophy Degree in Higher Education

David L. Meabon, Ph.D., Committee Chair

Alan S. Cureton, Ph.D., Committee Member

Mary E. Edwards, Ph.D., Committee Member

Malinda M. Matney, Ph.D., Committee Member

Toni A. Sondergeld, Ph.D., Committee Member

Dr. Patricia R. Komuniecki, Dean
College of Graduate Studies

The University of Toledo

December, 2012
An Abstract of

Does Faith-Based Worldview Predict Confidence in College Major: A Quantitative Longitudinal Study at the University of Michigan

by

Kristy Taylor

Submitted to the Graduate Faculty in partial fulfillment of the requirements for the Doctor of Philosophy Degree in Higher Education

The University of Toledo
December, 2012

This study attempts to show a relationship between being spiritual and choosing a college major. Using one public research institution, this quantitative, longitudinal study used secondary data from the Cooperative Institutional Research Program from the years 2000–2011. The survey included items that asked students about their spiritual preference, their confidence in choosing a major, philosophy of life, and participation in community service. Results indicated direct effects from choosing a major and being involved in community service. The study also showed direct effects of choosing a major and developing a meaningful philosophy of life. The strongest finding in this study was the gap in students changing their major (90% of college students from this institution say that they will change their major).
I dedicate this dissertation to

My best friend—Father, Son and Holy Spirit. I praise you God for the work you have done in me. My prayer is that I always honor you in whatever I do.

Matt Taylor—This journey was only made possible by your love and support. You have sacrificed just as much as I have. You are an amazing man of God, husband, father, and friend.

Reeves, Davis, Pearson, and Brock Taylor—You four are the reason that mom strived so hard to get this degree. You are the four most handsome and smartest kids I have ever seen. You can be anything God wants you to be.

Mom, Kim, Kelly, and Karen—Life is richer being close to those we love.

Aunt Nancy and Uncle Steve—I am this position today because the two of you.

Colleagues and students—Past, present and future, may this work be an inspiration to show the love of Christ and send a message that anyone can be whom God creates them to be.

Libraries—Dundee public library, and Ida public library for always allowing me to study in quiet areas.

Cohort—Monroe County Community College cohort and Dr. Denise Bowers, Randy Daniels, Jacquelyn Jones, Dr. Christine Knaggs, and Kellie McGilvray.

River of Life, Compelled, and Bridge Point—your love continues to exemplify Christ.
Acknowledgements

My dissertation never would have achieved the level of academic contribution without my committee members. Dr. Meabon, you have been an outstanding chair. I appreciate the memories of laughter and tears. The “marathon” was rigorous, but rewarding. Thank you for all that you taught me, coach! Dr. Sondergeld, you have been an outstanding methodologist. I will always treasure our coffee meetings and several times running the data. You have been a trooper and I appreciate all that you have done for me! Dr. Matney, thank you for taking a chance on someone that you did not even know. You have been super encouraging since the day I met you virtually. Dr. Cureton, thank you for your contributions, even in the midst of your extremely busy schedule. Thank you for continuing to expand His kingdom in your role as president.
Table of Contents

Abstract iii

Acknowledgements v

Table of Contents vi

List of Tables ix

List of Figures x

List of Abbreviations xi

I. Introduction

A. Statement of the Problem 2

B. Purpose and Research Questions 5

C. Conceptual/Theoretical Framework 5

D. Figure 8

E. Data Collection and Population 15

F. Methodological Approach 16

G. Researcher Assumptions 17

H. Study Limitations 17

I. Summary 18

II. Literature Review 19

A. Historical Overview on Significant Impacts on Spirituality in Colleges 20

B. Student Spiritual Aspects 23

C. Moral Development 29

D. Identity Development 30

E. Religious Aspects 39
F. Parks and the Spiritual Development of Young Adults 41
G. Service Aspects 43
H. How Students Make a Choice in Choosing a Major 47
I. Parent Involvement 51
J. New Forms of Spiritual Search and Practice for Students 54
K. Conclusion 57

III. Methodology 58
A. Research Design 59
B. Methods 59
C. Data Analysis 67
D. Logistic Regression Assumptions 69
E. Delimitations 70
F. Survey-Research Limitations 71
G. Summary 73

IV. Results 74
A. Research Question 1 74
B. Research Question 2 75
C. Research Question 3 76
D. Research Question 4 77

V. Discussion, Recommendations, and Conclusion 81
A. Community-Service Involvement 82
B. Spiritual Aspects 84
C. Religious Aspects 86
List of Tables

Table 1 Study Demographics ........................................................................................................... 64

Table 2 Number of Freshman Students Compared to Total Students Enrolled at the
University of Michigan Taking the Cooperative Institutional Research
Program Freshman Survey Each Year ............................................................................................... 66

Table 3 Research Questions, Variables, Survey Item(s), Analysis Matrix ..................................... 68

Table 4 Crosstabulation Results for Spirituality (Importance of Philosophy of Life) by
Possible Major Change. .................................................................................................................... 75

Table 5 Crosstabulation for Religion (Attended/Did not Attend) Service by Possible
Major Change ..................................................................................................................................... 76

Table 6 Crosstabulation Results for Service Aspects by Possible Major Change .......... 77

Table 7 Model Summary of Community Service and Spirituality ................................................. 78

Table 8 Model Summary (Display: At each step selected) ............................................................ 78

Table 9 Classification Table (Display: At each step selected) ..................................................... 79

Table 10 Regression Coefficients for Example 1 (Display: At each step selected). Variable in the Equation ................................................................................................................................. 79
List of Figures

Figure 1. Power of the spiritual quest. Model of conceptual framework that was constructed using research theories to provide the relationships between faith-based worldview and the confidence of freshmen in college to choose a major. ..................................................................................................................8
List of Abbreviations

CIRP ............... Cooperative Institutional Research Program

CSBV ............... College Students’ Beliefs and Values

HERI ............... Higher Education Research Institute

UCLA ............... University of California, Los Angeles
Chapter One

Introduction

Motives vary for freshman in college who choose a particular major. Faculty and administrators in higher education try to encourage students to select a major inside and outside the classroom. Encouraging a student to consider choosing a major from a spiritual perspective is not typical at most public institutions. Research provides information on student spirituality, and other research shows statistics on students choosing a major, but rarely are the two integrated. In this chapter, I will examine what commonalities and differences exist in the involvement of freshmen at the University of Michigan choosing a major, considering spirituality, by using longitudinal data from the annual Cooperative Institutional Research Program (CIRP) Freshman Survey.

The CIRP Freshman Survey is a national survey that has been used for over 40 years. It was started in 1966 as a way to measure college students’ self-reported reasons for attending college and reasons for choosing the institution they are attending, as well as student hopes and expectations for their educational experience. Responses to the CIRP Freshman Survey also provide demographic information such as family background and high school activities, and give insight into student attitudes and viewpoints regarding selected social issues (Higher Education Research Institute [HERI], n.d.).

The University of Michigan started participating in the CIRP Freshman Survey as soon as the survey began (1966–1976). Although the University of Michigan stopped participating for 17 years, they resumed participation in 1993 after identifying that there was a gap in understanding about why student trends repeated year after year; those
trends became a problem for the institution (University of Michigan, 2011). Since that time, University of Michigan students have usually been included as part of the annual national portrait released widely through the media. The specific population of freshmen that was studied at the University of Michigan is the 2000–2011 entering classes. The sample data originally obtained from the University of Michigan for the years of 2000-2011 was 47,300.

Part one of Chapter 1 will consist of a statement about why it might be a problem for college freshman not to have a major. Part two of Chapter 1 will describe the purpose of this study and research questions. In Part three of the chapter 1, will provide an overview of Torrance’s (1994) spiritual-quest theory, which will be used to guide this study in order to explain both why such a gap may exist in the literature about spirituality and confidence in choosing a major, and how this gap might be reduced in the future. Part four of Chapter 1 will describe the data collection and population. Included in this section will be the methodological approach, assumptions, limitations, and a summary.

This study attempted to shed light on why a gap exists in literature about spirituality as a consideration in freshmen choosing a major. It also described how institutions of higher education can better meet the needs of students choosing a major with a spiritual component involved in that consideration.

A. Statement of the Problem

One of the most widely used dichotomous measures in educational research and college success is student retention and dropout. Typically defined as two sides of the same coin, retention is staying in school until completion of a degree and dropping out is leaving school prematurely (Tinto, 1993). Retention is one of the most important issues
facing higher education today (Carey, 2008). Every student who drops out of higher education “costs a school thousands of dollars in lost investment and future revenue” (Early Alert System, 2010, para 2). According to the premier college-bound website (Early Alert System, 2010) on the Internet, the main contributing factors for students who drop out are choosing the wrong major, homesickness, educational burnout, academic unpreparedness, personal or family issues, financial constraints, incorrect institutional fit, and lack of guidance or mentors.

One factor perpetuating retention issues is the lack of guidance provided to a student deciding their major. Another contributing factor to student drop out could be lack of direction in knowing who they are spiritually (Holland, 1985). Specifically, faculty and staff are hesitant to give students spiritual advice about choosing a major (Braskamp, Trautvetter, & Ward, 2006). Researchers such as Astin, Astin, and Lindholm (2010) have found that a growing number of college students are participating in a variety of activities that, in one form or another, provide gateways to an inner life of reflection and self-examination (Dalton, 2003).

There is considerable evidence that a growing number of college students today are engaged in many new forms of spiritual search and practice (Baker, 2003). The forms and patterns of contemporary college-student spirituality are diverse and multifaceted and not yet well understood. Consequently, there is much to be learned about this recent development in college-student spirituality to determine its meaning and importance for today’s college students’ choice of major.

Some students begin college knowing exactly what they will choose as their major. Other students don’t know what to choose as their major, or have career goals but
don’t know which majors will make them successful. In fact, most students find themselves switching majors several times during college (Boyd, 2010).

One reason students are undecided in a major could be because many students enter college underprepared for the demands of accelerated learning. According to an Achieve survey in 2002, 39% of recent graduates enrolled in college and 46% in the workforce say there are gaps in their college preparation because they chose the wrong major. Further, employers and professors say that of 10 graduates, 4 are underprepared for college (American Diploma Project, 2002).

Another reason some students may drop out of college is because they don’t know what their purpose is in choosing a major (Porter & Umbach, 2006). Until recently, there has been little literature on spirituality connected to choice of major in higher education. One reason may be because spirituality is difficult to measure; it cannot be solved empirically. Spirituality is abstract and means different things to different people. Literature that links spirituality and college-major choice is sparse. In the recent book by Astin et al. (2010) entitled *Cultivating the Spirit*, the authors suggested further research be done in the area of spirituality and students choosing a major. Research from the *National Study of College Students’ Search for Meaning and Purpose* (Astin & Astin, 2003b) suggested that positive outcomes are related to spirituality. One outcome noted in the 2003 spiritual survey done by the University of California, Los Angeles (UCLA) is that spirituality directly relates to academic performance, including graduate-level degree aspiration and intellectual self-confidence (Astin & Astin, 2003a).
B. Purpose and Research Questions

The purpose of this study was to see whether first-year University of Michigan freshmen’s faith-based worldview significantly predicts their choosing a college major. Additionally, this study investigated this relationship over a eleven year time span to see whether significant events impacted these predictive relationships. The research questions that guided this study follow:

R1. What are the spiritual aspects of University of Michigan students depending on their confidence in choosing a college major?
R2. What are the religious aspects of University of Michigan students depending on their confidence in choosing a college major?
R3. What are the service aspects of University of Michigan students depending on their confidence in choosing a college major?
R4. Can involvement in religious activities, spiritual activities, and service activities at the University of Michigan significantly predict choosing a college major?

C. Conceptual/Theoretical Framework

The theoretical framework that was used in this study was spiritual-quest theory (Astin et al., 2010; Dalton, Eberhardt, Bracken, & Echols, 2006; Klaassen & McDonald, 2002; Torrance, 1994). An early scholar, Torrance, began investigation two decades ago while preparing to teach a comparative literature course at Harvard University, entitled The Spiritual Quest. Torrance originally intended to examine major forms the quest has taken in Western literature and thought from ancient to modern times, but like any true
quest, this one took an unforeseen direction, opening new and largely unexplored thoughts (R. M. Torrance, personal correspondence, September 2, 2012).

Torrance’s (1994) research resulted in many fields of study as the dimensions of the subject became increasingly evident. Torrance examined the essential foundations or preconditions of the social, biological, psychological, and linguistic. The spiritual quest is a fundamental human activity and some of its principal variations, are manifested in religious practices of tribal peoples throughout much of the world (R. M. Torrance, personal correspondence, September 2, 2012). Torrance (1994) devoted the bulk of research and the book *The Spiritual Quest*, to examine variant forms the spiritual quest has taken among specific peoples of the polychromatic globe (R. M. Torrance, personal correspondence, September 2, 2012).

Torrance (1994) drew on a variety of thinkers as diverse as Bergson and Piaget, Van Gennep and Turner, Pierce and Popper, Freud, Darwin, and Chomsky. These researchers have in common deterministic behaviorisms, structuralisms, and poststructuralists’ that have sometimes dominated the human sciences in the 21st century. These human sciences have emphasized the dynamic and active dimensions of human experience, oriented not toward an immutable past or inertial present, but toward a future in the process of formation. Torrance placed high emphasis on seeing the human being as preeminently “the questing animal” (animal quaerens) in the order of nature (R. M. Torrance, personal correspondence, September 2, 2012).

Spiritual-quest theory is a form of engagement that emphasizes individual purpose and meaning-making in the world (Klaassen & McDonald, 2002). Fundamentally, spiritual quest represents the seeking in students that can lead to a better understanding of
who they are, why they are here, and how they can live a meaningful life: the “big questions” students confront, often for the first time as freshmen in college (Astin et al., 2010). Spiritual-quest theory reflects primarily an engagement in the search for meaning and purpose in life, underwritten by several key aspirations, including finding answers to the mysteries of life, seeking beauty in one’s life, developing a meaningful philosophy of life, becoming a more loving person, attaining inner harmony, and attaining wisdom (Astin et al., 2010). How students perceive their position in the world, develop a sense of meaning and purpose in life, and seek inner harmony and self-awareness are critical components of healthy identity development and mature psychological well-being (Dalton, Eberhardt, Bracken, & Echols, 2006). In short, the notion of spiritual-quest theory is clearly suggested by words such as searching, developing, finding, seeking, becoming, and attaining.

This research uses spiritual-quest theory to determine the relationship between spirituality and freshmen’s confidence in choosing a major. The Figure was created by the researcher, inspired by a diagram from King and Mayhew (2004) in the Higher Education: Handbook of Theory and Research, to give a visual sense of the theoretical framework.
Figure 1. Power of the spiritual quest. Model of a conceptual framework that was constructed using research theories to provide the relationships between a faith-based worldview and the confidence of freshmen in college choosing a major.

D. Figure

The Figure is a conceptual framework I created based on empirical literature and experts in the field. The Figure “power of the spiritual quest” uses Astin’s (1993) Inputs–Environments–Outputs model to organize the empirical literature concerning students spiritual quest. Here, the inputs factor refers to students’ spirituality that contributes to spiritual-quest theory. The environments factor includes specific experiences of spiritual-quest theory that influence student choice of major. The outcome factor for this analysis comes from spiritual-quest theory, spirituality, and student choice of major.
To fully understand the Figure “power of the spiritual quest”, I will describe each box starting from left to right:

**a. Spirituality.** The first element of the visual model in the Figure “power of the spiritual quest,” starting on the left is spirituality. Belief in God or a higher being, prayer, meditation, worship experience, religious identification, and personality traits are examined. Wuthnow (2005) assessed how higher education has named and ritualized the experiences of spirituality, faith, and meaning. The word *spirit* shares the same roots as the words wind, breath, or air—a sense of power moving unseen (Oppenheimer, 2003).

Spirituality has been termed a multifaceted quality that looks to a higher being (Baker, 2003). According to Ricklan (2011), the highest spiritual achievement is attained by one who tries to emulate the spirit of God. A spiritual experience could include connectedness with a larger reality, yielding a more comprehensive self with other individuals in their community or with nature (Hall & Edwards, 2002).

**b. Belief in God:** Spirituality has been termed a multifaceted quality that looks to a higher being (Baker, 2003).

**c. Prayer:** In spiritual practices measured by the HERI project, many religious students reported they found value in prayer and adherence to religious teachings, and a large percentage had participated in religious services of some type in the year before they completed the survey (Astin et al., 2010).

**d. Values:** Chickering and Reisser (1993) and Duffy, Allan, and Dik (2010), among others, have documented the central importance in young adulthood of establishing a clear sense of one’s values, beliefs, and abilities.
e. **Worship**: College administrators were surveyed and most reported they found an increased interest in spirituality on the part of students, especially in areas such as new student organizations with a spiritual focus, worship, requests for speakers and programs on spirituality topics, more opportunities for yoga, the need for more quiet space on campus, and reflection (Astin, Astin, Lindholm, & Bryant, 2006).

f. **Integrity**: Developing integrity involves bringing actions in line with beliefs (Chickering, 1963; Chickering & Reisser, 1993).

g. **Worldview**: Students are actively dealing with worldview questions (Palmer, 1999).

h. **Student choice of major**. The second element in the Figure “power of the spiritual quest” is free will, feeling for a “calling” in life, vocation, parental influence, institutional influence, curricular experiences, and co-curricular experience.

i. **Free will**: Most students find themselves switching majors several times during college (Boyd, 2010). Some factors may include, but are not limited to, the student not knowing who they are spiritually (Holland, 1985).

j. **Calling**: Research and educational initiatives by almost 100 colleges receiving Career and Calling grants (Hirschi, 2010) from the Lilly Endowment have documented the central importance of a sense of destiny or calling in the career development of college students. Pascarella and Terenzini (2005) asked how one’s culture can begin to address the tasks of the young-adult years more adequately so educators can support the formation of a truly successful adulthood, rather than not asking big enough questions about the potential and vulnerability of young-adult lives. Young adulthood is the time to choose a major or explore and discover a student’s vocation or calling.
k. **Vocation:** Kerr (1991) thought about the formation of vocation and the concept of giving one's life for a cause that offered a sense of worthy purpose. This purpose involves developing a sense of life vocation. It may involve the creation of goals, and is influenced by the family and lifestyle of the individual (Chickering, 1963; Chickering & Reisser, 1993). It has become more complex to address issues of vocation and purpose when there is less confidence that the economy will hold steady, making choices for the future of our young adults seem more challenging (Parks, 2000).

l. **Parental influence:** In line with general theories on benefits of parental warmth and support for adolescent adjustment (Barber, Stolz, & Olsen, 2005), a growing number of studies have consistently shown positive concurrent and longitudinal associations between support and exploration in choosing a major (Dietrich & Kracke, 2009; Dietrich, Kracke, & Nurmi, 2011; Kracke, 1997, 2002; Kracke & Noack, 2005; Neuenschwander, 2008). Research in the career domain has shown, however, that parents’ controlling or interfering behaviors resulted in higher levels of broad and deep exploration in the final school year (Dietrich et al., 2011). Men who rated themselves higher in spirituality reported significantly higher numbers of fathers and mothers with graduate degrees (Turner & Bowen, 1999).

m. **Institutional influence:** Historically, higher education has placed unquestioned trust in colleges and universities, allowing members of the academy considerable freedom to pursue their work (Chickering & Zelda, 1987). However, faculty and staff are hesitant to give students spiritual advice about choosing a major (Braskamp et al., 2006). Researchers like Palmer (1999), Parks (2000), and Astin et al. (2010) advocate that all need to serve as spiritual guides, whether by accident or conscious effort.
n. Curricular experiences: It is important to create college and university environments that inspire students, faculty, administrators, and staff to strengthen their sense of connectedness and to challenge themselves and each other to be consistently responsive and accountable (Astin, Astin, Lindholm, & Bryant, 2005).

o. Co-curricular experiences: As students move into graduate and professional education across all sectors, mentoring environments continue to play a vital role in the ongoing development of young-adult lives (Parks, 2000).

p. Spiritual-quest theory. The third element in the Figure “power of the spiritual quest”, demonstrates how spirituality and student choice of major are depicted in spiritual-quest theory.Findings from the Spirituality Project (Higher Education Research Institute, 2010) specified that 75% of new students responding to the survey indicated that they were “searching for meaning/purpose in life,” and 80% reported that they were at least somewhat interested in spirituality. Almost 50% of students in the national survey suggested they believed themselves to be on a spiritual quest and that it was important to find ways to develop spiritually while in college. Many students reported they expected their colleges to provide opportunities for them to pursue their spiritual interests. Religious faith is also important to many new students: 80% reported that they held a belief in God or a higher power, and a similar percentage indicated they gained strength from their connection to their concept of a divine being. In short, the notion of spiritual-quest theory is clearly suggested by words such as searching, developing, finding, seeking, becoming, and attaining.

q. Student spiritual outcomes. The last three elements in the Figure “power of the spiritual quest” represent student spiritual outcomes, religious outcomes, and service
outcomes. Combining spirituality and student choice of major using spiritual-quest theory will produce these three outcomes. The top right-hand box is student spiritual outcomes, including relationship with God and identity development.

r. **Relationship with God:** A spiritual experience could include connectedness with a larger reality, yielding a more comprehensive self with other individuals in one’s community or with nature (Hall & Edwards, 2002). More than three fourths believe in a God, and more than two in three college students say that their religious/spiritual beliefs provide them with strength, guidance, and support. According to Ricklan (2011), the highest spiritual achievement is attained by one who tries to emulate their spirit equal to the holy spirit of God.

s. **Identity development:** Identity development builds on each of those that precede it. It involves becoming comfortable with oneself (Chickering, 1963). Researchers have paved the way in identity development in higher education. Their research includes Erickson’s (1964) work on ego development, Marcia’s (1966) model of identity development through crisis or exploration, Josselson’s (1987) work on women’s identity development, and Chickering (1963) and Chickering and Reisser’s (1993) work on college-student development. Chickering and Reisser’s theory of identity development was created specifically to examine the identity-development process of students of traditional age in higher education.

t. **Religious outcomes.** The word religion can be referenced as “faith” or “belief system.” Religion is a collection of cultural systems and worldviews that establishes symbols that relate to humanity in a spiritual and moral-value way (Barton, 2007). The practice of a religion may include sermons, sacrifices, celebration of the activities of a
God or Gods, festivals, feasts, funeral services, wedding services, meditation, music, art, initiations, dance, public service, or other aspects of human culture (Astin et al., 2010).

**u. Faith development:** Faith development refers to the growth and change that can occur throughout the course of one’s lifetime. It involves the structures or patterns of faith rather than its content. It involves moving through stages of cognitive and psychosocial development rather than looking at what someone believes (Astin & Astin, 2003a).

**v. Personal growth:** The academic, social, financial, and personal demands made on young people in college today can make for a fragmented and pressure-filled lifestyle to personal growth (Smith & Denton, 2005). Rhodes (2006) expressed hope that personal growth and change will be an outcome through dissonance. Fowler (1981) placed a stronger emphasis on the stages of faith and the psychology of human development and quest for meaning by looking at how a young adult develops and can flourish. The college years are a time when many college students reexamine inherited beliefs and values and reformulate some of their deepest personal beliefs and values. This process also connects with spirituality because both faith and spirituality involve an inner exploration of personal authenticity, wholeness, and purpose.

**w. Service outcomes.** Service-learning is a method of teaching, learning, and reflecting, throughout the community (Hara, 2010). For higher education institutions, service learning has been known to increase retention and engage students more fully in their campuses and their communities (National Service Learning Clearinghouse, 2012) This expresses understanding others and behaviors toward others.
x. Behavior toward others: Students seek ways to cultivate their inner selves, seeking to be compassionate and charitable, and determining what they think and feel about many issues confronting their society and global community (Astin et al., 2010).

y. Understanding others: In the developing mature interpersonal relationships vector, individuals learn to appreciate and understand others (Chickering, 1963).

z. Figure summary. To recap, the conceptual framework of the Figure “power of the spiritual quest” has four major parts. The first element is spirituality containing belief in God or higher being, prayer, values, worship experience, integrity, and spirituality worldview. The second element is student choice of major, which consists of free will, feeling a “calling” in life, vocation, parental influence, institutional influence, curricular experiences, and co-curricular experiences. The third element is spiritual-quest theory. The fourth element is a student spiritual outcome that consists of relationship with God, and identity development. Then is religious outcome, which consists of faith development and religious identification. The last outcome is service and consists of understanding others and behaviors toward others. In the next section, I provide a discussion of data collection and the study population.

E. Data Collection and Population

Quantitative correlational research using the CIRP Freshman Survey was used in this study. Each year, hundreds of 2-year colleges, 4-year colleges, and universities administer the CIRP Freshman Survey to hundreds of thousands of entering students, during orientation or registration. The CIRP Freshman Survey is designed for administration to incoming 1st-year students before they start classes. The instrument collects extensive information that allows for a snapshot of what incoming students are
like before they experience college. Schools participating in the CIRP Freshman Survey receive an institutional profile, which includes institutional survey results organized by gender, full- and part-time status, comparisons with similar institutions, significance testing, effect sizes, CIRP Freshman Survey constructs and theme reports, a data file of student responses; and a monograph summarizing the national results (HERI, n.d.).

The survey covered a wide range of student characteristics: parental income and education, ethnicity, and other demographic items; financial aid; secondary school achievement and activities; educational and career plans; and values, attitudes, beliefs, and self-concept (HERI, n.d.). For the purposes of this study I looked at questions aligned with spiritual-quest theory. These questions on the CIRP Freshman Survey included student spiritual aspects, religious aspects, service aspects, and student choice of major. Data for this study were obtained from a longitudinal survey-research design using correlation methods. The eleven years under study ranged from 2000 to 2011. Secondary analysis of this data was conducted using SPSS on this archived data at the University of Michigan.

F. Methodological Approach

After determining that the CIRP Freshman Survey would be used with SPSS, the institution that was chosen was the University of Michigan. The University of Michigan was chosen because it is a large, public, Tier one institution that has used the CIRP Freshman Survey for several years. I found CIRP Freshman Survey information could be accessed, and performed the common steps to retrieve the data set (see Chapter three for a detailed explanation of the process). A longitudinal survey-research methodology guided the study using descriptive analyses for Research Questions one through three.
Logistic regression was used for Research Question four because the outcome variable was categorical. Using the CIRP Freshman Survey longitudinally from 2000 to 2011, I performed secondary analysis at the University of Michigan. The University of Michigan was the main institution of focus for this study. Specific questions on the CIRP Freshman Survey were related to student spiritual aspects, religious aspects, service aspects, and students’ confidence in choosing a major.

G. Researcher Assumptions

In this dissertation it was assumed, by evaluating a freshman in college from the CIRP Freshman Survey, there would be a correlation between being spiritual and choosing a major. Another assumption from using the CIRP Freshman Survey was that students have a philosophy of life or believe in service learning. The assumptions of this study illustrated the importance of encouraging spirituality in choice of major by faculty and administration to improve college-student satisfaction and retention rates.

H. Study Limitations

There were several limitations to this study. One limitation is that it was quantitative in nature, and thus I could not ask follow-up questions. Another limitation of this study was that it was difficult to fully measure student spiritual aspects, religious aspects, service aspects, and student choice of major using only the items provided on the CIRP Freshman Survey.

The definition of spirituality could be a limitation because multiple definitions of spirituality exist. A student, faculty member, or administrator may measure successful choice of a major in different ways. An individual can state whether they are happy, but
measuring success in choosing a major is challenging. Other limitations could be my own bias/experience because of my own worldview centered on a higher being.

Lastly, my own faith-based worldview on spiritual quest impacts my beliefs in this study. As for many other students, my parents helped shaped my worldview, but became apparent in my “seeking” through my college years. I believe that students need to have a purpose in what they do for a major. I believe that we are all created for a purpose in this life to serve God in everything that we do. It is my belief that higher education does not prepare students to know their calling and purpose in life.

Recognizing my potential bias, I took the following steps to minimize any bias that would have impacted my research through my use of literature, a conceptual framework to inform my study, formation of research questions, and analysis of the findings.

I. Summary

Summarizing Chapter one, the purpose of this study was to determine if there was a relationship between choosing a major and spirituality. The CIRP Freshman Survey defined research questions to be used with secondary data in analyzing student spiritual aspects, religious aspects, service aspects, and students’ confidence in choice of major. Spiritual-quest theory drove this study to query students’ searching, developing, finding, seeking, becoming, and attaining. Quantitative methods from the CIRP Freshman Survey from the University of Michigan were used longitudinally from 2000 to 2011. A comparison of data assessed if students have changed over time in searching, developing, finding, seeking, becoming, and attaining. The next chapter will provide a review of the literature to aid in the study analysis.
Chapter Two

Literature Review

This chapter provides a contextual overview of a gap in the literature relating to students choosing a major from a spiritual perspective in the United States. An analytical review of the literature not only provided contextual, but also theoretical support for the reasons why such a gap is so pervasive in the United States, and what solutions hold the most promise for diminishing this educational gap between students being spiritual and choosing a major.

This chapter is divided into eight sections. The chapter will start with the history of higher education and end with new forms of spiritual search and practice for students. To be more specific, section one will consist of a historical overview of how the American university has changed spiritually. Section two will consist of students’ spiritual aspects and will also include the theoretical framework that was used to guide this study. Included in this section will be the literature that supports Torrance’s (1994) spiritual-quest theory. Section three will describe moral development consisting of King and Mayhew’s (2004) research on moral and ethical dimensions of education. Section four, will cover identity development. Included will be Chickering and Reisser’s (1993) model of identity development in education. This section will also include research on destiny or calling, personal faith, wholeness, and mattering. Section five will include religious aspects. This section will also include Fowler’s (1981) six “psychosocial and faith stages” that correspond to and overlay the stages of human development.

Section six will consist of Parks (2000) and the spiritual development of young adults. Section seven will describe service aspects. This section will also include research
by Hara (2010) and service learning experiences by students. Section seven will consist of research on how students choose a major. This section will consider spirituality from both a theoretical and a practical standpoint to better understand the impact on college students of choosing a major. This section will also present an overview of examples of mentoring and who should be involved in helping a student choose a major. Section eight concludes that in order to close the gap, new forms of spiritual search and practice for students need to take place. This study attempted to shed light on why a gap exists in the literature about spirituality as a consideration in choosing a major, and how institutions of higher education can better meet the needs of students choosing a major, including a spiritual component.

A. Historical Overview on Significant Impacts on Spirituality in Colleges

Historically, the movement of American higher education began as an extension of diverse Christian denominations. Each of the first three colleges in the British colonies of America was unique, but all may be described as “schools of the Reformation” (Geiger, 2011, p. 39). Harvard College, the college of William and Mary, and Yale College were established as adjuncts of their respective churches, which in turn were integrally related to the colonies’ civil governments. “Almost without exception, to be a college in America before the Civil War was to be a Christian college” (Carpenter & Shipps, 1987, p. 77). American higher education was the history both of church denominations and the westward expansion, which can be traced through the history of America’s colleges and universities (Cureton, 1989).

Along with the geographical development of America as a nation in the antebellum period, higher education grew in importance, stature, and accessibility. The
The Jacksonian period in the early to mid-1800s challenged “elitist” accessibility to higher education by challenging the status quo and encouraging middle class students to attend college and/or universities (Geiger, 2011). Institutions of higher education experienced changes and adjustments as the expansion of America and higher education influenced society.

The Civil War has long been the conventional dividing line for the history of American higher education. A circumscribed role remained to be played by the faculty of tutors, who were usually recent graduates preparing for the ministry. The college was seen as a vehicle to teach church doctrine and maintain a denomination’s character while educating the church’s youth in liberal arts disciplines (Cureton, 1989). Colleges were started by denominations for the purpose of intentionally educating young people for their churches.

The goal of most Christian colleges during the pre-Civil War years was to produce men and women (although very few) of a Godly nature. Generally, the curricular and co-curricular activities were designed to educate students both intellectually and spiritually (Ringenberg, 1984). Reflective of this educational philosophy, many faculty members of antebellum Christian colleges were ordained ministers, seeking to expand the kingdom of God through the education of young people.

Shortly before and directly after the Civil War, America began to experience two significant influences in society: industrialization and immigration (Kerr, 1991). The influence of industrialization sparked a significant need to provide more education to the country’s youth. Simultaneously, immigrants were coming to America in large numbers in hopes of securing a better life. Education was seen by the immigrants as a vehicle to
better jobs and economic status (Kerr, 1991). Because of these and several other influences, administrators in American higher education began to acknowledge the emerging realm of pluralism in education (Geiger, 2011). Geiger (2011) identified the development of the American state university during the advent of pluralism in education as a significant event.

One major development in higher education was the passage of the Morrill Act in 1862 by the U.S. Congress (Geiger, 2011). Under the guidelines and conditions established in the Morrill Act of 1862, state legislatures created and designed state universities to meet the growing technological needs of a changing society (Geiger, 2011). The Morrill Act of 1862 led to the creation and development of land-grant universities. Land-grant universities deviated from the standard liberal arts curriculum by offering courses in agriculture and mechanical arts.

As the pluralistic nature of education evolved in the late 1800s, some Christian colleges remained rooted in their historic educational mission. To respond to a changing society, many Christian colleges lessened their ties to the church or denomination to address new and perceived educational needs (Cureton, 1989).

Their mission was to produce well-rounded, balanced, and holistic students whose education was based on certain denominational doctrines and theology (Ringenberg, 1984). As American higher education evolved in the late 1800s and early 1900s, many antebellum Christian colleges were influenced to adjust and/or adapt their institutional mission and purpose. During this time in American higher education, the struggle for Christian colleges was to decide if Christian traditionalism was best for the institution or whether the college should participate in the emerging academic revolution.
Marsden and Longfield (1992) believed that the collapse of the American evangelical academy was almost instant. Christian colleges left their philosophical positions of realistic and absolutist assumptions about learning to adopt idealistic, developmental, and historicist views (Marsden & Longfield, 1992). The educational values and curriculum reflective of the Christian college vanished almost without a trace.

American higher education experienced tremendous growth over the years. Change has not only occurred in numbers and curriculum emphasis, but in the nature of intellectual life (Ringenberg, 1984). This holds true for several institutions, including the institution I chose as my focus: the University of Michigan.

The University of Michigan, like several others, was also founded on religious grounds. In 1817 a clergyperson and a priest named the school Catholepistemiat, or University of Michigania, located in Detroit, Michigan. Twenty years later in 1837, the school moved to its current location in Ann Arbor, Michigan and was one of the first public universities in the nation (University of Michigan, n.d.). The State of Michigan is unique in many ways (see Appendices A and B) in its religion and economy.

Positive emotions were less susceptible to post-9/11 depression. Further measures were reported of students’ resources for confronting crises. Such resources included optimism, the ability to relax, and the ability to remain calm in the face of difficulty. As the research indicated, students who experienced many positive emotions also possessed more resources (Fredrickson, Tugade, Waugh, & Larkin, 2003).

**B. Student Spiritual Aspects**

Some individuals define themselves as spiritual, but not religious. Other individuals may define themselves as religious, but not spiritual. This reflects the notion

23
that currently American traditions are under review because it is a time of such profound change. Wuthnow (2005) reassessed how higher education has named and ritualized the experiences of spirituality, faith, and meaning. A worldview provides ways of giving expression to the things we know intuitively, and the dimensions of life that are held to be important. These dimensions of human experience are always linked to our sense of participation in something greater than ourselves alone. The word spirit shares the same roots as the words wind, breath, or air—a sense of power moving unseen (Oppenheimer, 2003). When an individual refers to spirit, faith, and ultimate reality (whether expressed in religious or secular terms), they are in a domain that is tangible and intangible, seen and unseen, known and unknown. These dimensions of experience and inquiry hold the opportunity for human beings to become more profoundly educated and to apprehend life more richly. They directly relate to the question of higher education, because to become truly educated, we must take all of reality into account (Chickering & Reisser, 1993).

A spiritual person or someone who is considered of “high spirituality” can be defined in numerous ways. Spirituality has been termed as a multifaceted quality that looks to a higher being (Baker, 2003). According to Ricklan (2011), the highest spiritual achievement is attained by one who tries to emulate their spirit equal to the holy spirit of God. Some spiritual practices intended to develop an individual’s inner life include meditation, prayer, and songs of worship. A spiritual experience could include connectedness with a larger reality, yielding a more comprehensive self with other individuals in their community or with nature (Hall & Edwards, 2002).

There has been a lack of interest on the part of public higher education students on the subject of spirituality. Although personnel in universities continue to emphasize
academics, test scores, grades, credits, and degrees, they have ignored students’ inner development (Astin et al., 2010). The book *Cultivating the Spirit* by Astin et al. (2010) depicted spirituality as having been neglected. These researchers defined spirituality as having to do with where one comes from, one’s values, sense of who one is, beliefs of why one is here on earth, and the meaning and purpose that one sees in work and life.

Spiritual development has been researched less at public institutions. Astin et al. (2010) found a gap in research in this area and embarked on a new study in the area of students’ spiritual development by starting a Spirituality in Higher Education project in 2003. These researchers reported in their book, *Cultivating the Spirit*, that additional research needs to be done in the area of combining spirituality and choosing a major (Astin et al., 2010).

In the last ten years, there has been increased interest in the area of student spirituality among college students. Higher education scholars and practitioners at secular institutions have devoted efforts to researching the subject of students and spirituality (Astin et al., 2010; Braskamp et al., 2006; Chickering, Dalton, & Stamm, 2006; Kazanjian & Laurence, 2000; Tisdell, 2006). Most religious studies are conducted at church-affiliated colleges. Scholars and practitioners of religious studies at church-affiliated colleges in the last ten years are authors such as Benne (2001), Simon (2003), Freitas and Winner (2010), Simmons (2001), Smith (2003), and Schuman (2009).

Researchers Bryant, Choi, and Yasuno (2003) looked for a way to recognize the spiritual dimension of people’s lives in a way that includes everyone. The researchers depicted building significance to a student’s life as a way of understanding human
development. They also looked through a lens that can be recognized as the spiritual aspects of the human experience.

Torrance’s (1994) spiritual-quest theory was used as the theoretical framework to explain why such a gap may exist, and how this gap might be reduced in the future. Spiritual-quest theory reflects primarily an engagement in the search for meaning and purpose in life, underwritten by several key aspirations, including finding answers to the mysteries of life, seeking beauty in one’s life, developing a meaningful philosophy of life, becoming a more loving person, attaining inner harmony, and attaining wisdom (Astin et al., 2010). How students perceive their position in the world, develop a sense of meaning and purpose in life, and seek inner harmony and self-awareness are critical components of healthy identity development and mature psychological well-being (Dalton et al., 2006). In short, the notion of spiritual-quest theory is clearly suggested by words such as searching, developing, finding, seeking, becoming, and attaining.

Spiritual-quest theory is a form of engagement that emphasizes individual purpose and meaning making in the world (Klaassen & McDonald, 2002). Fundamentally, spiritual quest represents the “seeking” in students that can lead to a better understanding of who they are, why they are alive, and how they can live a meaningful life: the “big” questions students confront, often for the first time as freshmen in college (Astin et al., 2010).

Spiritual-quest theory reflects primarily an engagement in the search for meaning and purpose in life, underwritten by several key aspirations, including finding answers to the mysteries of life, seeking beauty in one’s life, developing a meaningful philosophy of life, becoming a more loving person, attaining inner harmony, and attaining wisdom.
(Astin et al., 2010). How students perceive their position in the world, develop a sense of meaning and purpose in life, and seek inner harmony and self-awareness are all critical components of healthy identity development and mature psychological well-being (Astin & Astin, 2003a).

Recent studies have shown that college students still maintain a strong interest in spiritual and religious matters. In the United States, four in five students say that they have an interest in spirituality (Grace, 2009). Nearly two thirds say that their spirituality is a source of joy (Grace, 2009). More than three fourths believe in a God, and more than two in three college students say that their religious/spiritual beliefs provide them with strength, guidance, and support. Finally, three fourths of students in the United States feel a sense of connection with God/a higher power that transcends personal self (Grace, 2009).

In 2005, The HERI at UCLA started the Spirituality Project. This Spirituality Project provides the most recent and comprehensive data available on what college students believe about religion and spirituality and what role beliefs, attitudes, and behaviors play in students’ lives. The data from the Spirituality Project (Higher Education Research Institute, 2010) revealed the surprising importance of religion and spirituality to college students today and raised many questions about the difficulties students report they encounter when they try to engage in spiritual-search activities in the higher education setting.

For example, findings from the Spirituality Project (Higher Education Research Institute, 2010) specified that 75% of new students responding to the survey indicated that they were “searching for meaning/purpose in life,” and 80% reported that they were
at least somewhat interested in spirituality. Almost 50% of the students in the national
survey suggested they believed themselves to be on a spiritual quest and that it was
important to find ways to develop spiritually while in college. Many of these students
reported that they expected their colleges to provide opportunities for them to pursue
their spiritual interests. Religious faith is also important to many new students. Eighty
percent reported that they held a belief in God or a higher power, and a similar
percentage indicated that they gained strength from their connection to their concept of a
divine being.

In spiritual practices measured by the HERI project, many religious students
reported that they found value in prayer and adherence to religious teachings, and a large
percentage had participated in religious services of some type in the year before they
completed the survey (Astin et al., 2010). Having conversations with friends and family
about religion and spirituality is also a common way college students seek to clarify and
depen their spiritual search. Other spiritual practices are meaningful for many students
including practicing self-reflection and meditation, reading sacred texts or other books
with spiritual themes, and participating in retreats or attending meetings where religious
and spiritual topics are examined.

Students today have high ambitions and aspirations for educational and
occupational success, and college is the means by which they believe they can realize
their goals. However, students are also actively dealing with worldview questions
(Palmer, 1999). Students coming to campuses today are a diverse group ethnically,
politically, socioeconomically, and religiously. Students are searching for a deeper
meaning in their lives, looking for ways to cultivate their inner selves, seeking to be
compassionate and charitable, and determining what they think and feel about many issues confronting their society and global community (Astin et al., 2010). Along with spirituality, King and Mayhew (2004) conducted a macro study on moral development.

C. Moral Development

Moral development has been a central purpose of American higher education since its inception (King & Mayhew, 2004). College mission statements continue to refer to purposes that include a moral dimension, such as preparation for citizenship, civic engagement, character development, moral leadership, service to society, and responsible participation in a diverse democracy.

Embedded in the emphasis on the moral and ethical dimensions of education is the assumption that colleges and universities are well positioned to serve these purposes, and that they provide educational experiences for students to develop their moral capacities. King and Mayhew (2004) organized and summarized a wide variety of studies that examined moral development among college students.

Research provides an extensive array of evidence about moral development as a collegiate outcome. King and Mayhew (2004) defined the relationship between participation in higher education and the development of moral reasoning in college students. This central question of a relationship between participation and higher education and the development of moral reasoning in college students has been the topic of at least 45 studies, with striking results: almost 90% reported a significant relationship between level of formal education and moral reasoning (King & Mayhew, 2004). Their research included the first of these to be longitudinal studies, which are essential for the
validation of any developmental model. A series of longitudinal studies examined the effects of age and education on the development of moral reasoning.

Across these studies, students’ use of conventional-level reasoning decreased during college, and their use of post conventional moral reasoning increased (King & Mayhew, 2004). King and Mayhew (2004) found evidence that collegiate experiences promote the development of moral reasoning among undergraduate students. However, because students grow older as they attend college, age and education are frequently confounded in longitudinal designs. Controlling for age by using same-age no college comparison groups can test whether gains in moral reasoning are due to education, age, or the interaction between them. King and Mayhew (2004) researched and tracked moral-reasoning development of participants from the end of high school to 6 years beyond high school; some attended college and others did not. Collectively, these studies provide strong evidence that participation in formal education promotes the development of moral reasoning among undergraduate students.

D. Identity Development

If student differences and needs based on ethnicity can be intentionally addressed, institutional services and the campus culture can in turn develop into a true community of learners. Rhodes (2006) expressed hope that personal growth and change will be an outcome through dissonance. Researchers Evans, Forney, and Guido-DiBrito (1998) posed the question of why higher education should be concerned with the identity development of students.

Researchers who have paved the way in identity development in higher education include Erickson’s (1964) work on ego development, Marcia’s (1966) model of identity
development through crisis or exploration, Josselson’s (1987) work on women’s identity development, and Chickering (1963) and Chickering and Reisser’s (1993) work on college-student development. Chickering and Reisser’s theory of identity development was created specifically to examine the identity-development process of students of traditional age in higher education. The research, which was begun in 1959 and finished in 1969, involved surveying college students. This work was revisited and updated in 1993 in cooperation with Reisser.

The theory of identity development has been used to evaluate students in areas such as developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. Chickering’s (1963) theory examined identity development by means of seven vectors of development that contributes to identity. These vectors can be thought of as a series of stages or tasks that deal with feeling, thinking, believing, and relating to others. Individuals may progress through the vectors at different rates. The vectors have a tendency to interact with each other, and this can cause reevaluation of issues associated with vectors that had already been worked through. Although the vectors do build on one another, the vectors do not follow a strict sequential order. Developing through multiple vectors allows individuals to function with greater stability and intellectual complexity (Chickering, 1963).

The managing emotions vector consists of learning to understand, accept, and express emotions. Individuals learn how to appropriately act on the feelings they are experiencing. In the more recent work, Chickering and Reisser’s (1993) theory was a
broad and covered emotion including anxiety, depression, guilt, anger, and shame along with positive emotions such as inspiration and optimism.

The successful achievement of moving through autonomy toward interdependence vector involves learning how to be emotionally independent. This includes becoming free from the consistent need for comfort, affirmation, and approval from others. Individuals also see growth in problem-solving abilities, initiative, and self-direction. They begin to understand that they are part of a whole. They are autonomous, but interdependent on others in society (Chickering & Reisser, 1993).

In the developing mature interpersonal relationships vector, individuals learn to appreciate and understand others (Chickering, 1963). Some of the related tasks include cross-cultural tolerance and appreciation for the differences of others. An individual also becomes competent in developing and maintaining long-term intimate relationships. Chickering and Reisser (1993) moved this up on the list of vectors in the revised edition to show the importance of developing relationships.

The establishing identity vector builds on each of the ones that come before it. It involves becoming comfortable with oneself (Chickering, 1963). This includes physical appearance, gender and sexual identity, ethnicity, and social roles. It also includes becoming stable and gaining self-esteem. A person who has a well-developed identity can handle feedback and criticism from others (Chickering, 1963; Chickering & Reisser, 1993).

In the developing purpose vector, an individual develops commitment to the future and becomes more competent at making and following through on decisions, even when they may be contested. It involves developing a sense of life vocation. It may
involve the creation of goals, and is influenced by the family and lifestyle of the individual (Chickering, 1963; Chickering & Reisser, 1993).

The developing integrity vector consists of three stages that flow in chronological order, but are able to overlap: humanizing values, personalizing values, and developing congruence. The process of humanizing values encompasses the shift from a cold, stiff value system to one that is more balanced with the interests of others matched with the interests of the self. After this is established, the individual begins to assemble a core group of personal values that are firmly held, but the beliefs of others are considered and respected. Developing congruence involves bringing actions in line with beliefs (Chickering, 1963; Chickering & Reisser, 1993).

Research on student development during the college years suggests there are at least five important developmental factors that contribute to the spiritual-search process (Chickering & Reisser, 1993; Erickson, 1964; Josselson, 1987). These developmental factors align with spiritual-quest theory: searching, developing, finding, seeking, becoming, and attaining. Student development in these areas is stimulated by the need to respond to some powerful sociopsychological forces that traditional-age college students must learn to master and resolve. Leppel (2001) suggested that the developmental concerns that press on young adults at this time of their lives are often posed as “big questions.” Chickering and Reisser (1993), in their discussion of identity development, described a set of questions students resolve to build an identity, including Where do I come from? What have they passed on to me? What were their values and traditions? Do I define myself as a part of a family group, a racial group, a religious tradition? Who are my people? How do I define myself as a member of a specific culture among many
cultures? How do I define myself in a social and historical context? (Chickering & Reisser, 1993, p. 182). Listed below are developmental concerns such as identity, destiny, or calling, personal faith, wholeness, and mattering, related to the big questions that college students seek.

**a. Identity.** The big question that drives the search for identity is, Who am I? Chickering and Reisser (1993) and Duffy et al. (2010), among others, have documented the central importance in young adulthood of establishing a clear sense of one’s values, beliefs, abilities, and the ability to achieve an inner sameness that gives stability and continuity to their lives. The search for identity is closely connected to a spiritual search because identity focuses on the inner life and requires examination of self, reflection, and taking a look at one’s foundational beliefs, purposes, and values.

**b. Destiny or calling.** The big question here is, Where am I going? For most students, the college years require them to make important choices and commitments about their future work and lives. Parents, peers, employers, and society expect college students to prepare for adult life while in college. This question is about what academic major or career they will choose and also involves a much broader search for their place in the world and the unique purpose or destiny they believe is intended for their lives. Research and educational initiatives by almost 100 colleges receiving Career and Calling grants (Hirschi, 2010) from the Lilly Endowment have documented the central importance of a sense of destiny or calling in the career development of college students. Students’ search for their calling stimulates spiritual introspection because the search for one’s special mission or destiny in life merges naturally with the personal quest for meaning and purpose.
c. **Personal faith.** The big question that faith poses is, What can I believe in? If faith is understood as the search for ultimate meaning and truth (Holcomb & Anderson, 1978), then it is easy to see that the search for what to trust and believe in is a pivotal concern for most college students. The college years are a time when many college students reexamine inherited beliefs and values and reformulate some of their deepest personal beliefs and values. This process also connects with spirituality because both faith and spirituality involve an inner exploration of personal authenticity, wholeness, and purpose.

d. **Wholeness.** The question for wholeness is, How can I be happy? The academic, social, financial, and personal demands made on young people in college today can make for a fragmented and pressure-filled lifestyle (Smith & Denton, 2005). For all the happy images associated with college life, most students struggle to maintain a balanced life amid so many pressures and expectations. The question is more than time management, and more than academic achievement, or having a balanced lifestyle; it is about finding a sense of wholeness that gives enduring fulfillment, meaning, and a sense of integration. Spirituality is one of the ways college students seek to unify a fragmented life and discover a personal path to enduring happiness and purpose.

e. **Mattering.** The question to a student to “matter” in life is, Will my life make a difference? The spiritual quest among college students is also motivated by the desire to live a life that matters and is meaningful and beneficial to others. As Porter and Umbach (2006) pointed out, this question is about the consequences of one’s life and if it, in the end, makes a positive contribution. Living a life that matters is a concern for many college students because they are at the threshold of adult life, a time of idealism and
great expectations when they want their lives to make a difference in some tangible way. This question is also related to the spiritual quest because college students are at a time in their lives when they seek clarity and direction about what makes for a significant and momentous life.

University of Michigan students are similar to students nationally in religious and spiritual behaviors and beliefs. Matney (2004), a researcher at the University of Michigan, has given statistics as an example:

* 78.4% of University of Michigan students attended religious services frequently or occasionally in their last year of high school, similar to the national number of 79.5%.

* Although entering University of Michigan students have declined in their own self-assessment of “spirituality,” they have not declined in this area as sharply as the national student body. Between 1999 and 2001, the percentage of students rating their spirituality as “above average” nationally decreased by 8%.

* Since September 11, 2001, there has not been a rise in student self-ratings of either “spirituality” or “religiousness.” Also, religious-service attendance has dropped for national and University of Michigan male students since September 11.

* In the last 5 years, there has been a slight rise in the percentage of University of Michigan students who say they have “discussed religion” during high school. Nationally, there has been a slight drop in the percentage of students who stated that they have discussed religion.
* Although the national student body reports a drop in the percentage of students desiring to “integrate spirituality in their lives,” during the last 5 years, [University of Michigan] students have not had a similar decline in this desire until the last year. (Matney, 2004, p. 2)

According to Matney regarding implications of being more “religious” or “spiritual” on other aspects of student lives, some interesting linkages emerge for University of Michigan entering students:

* About 24.7% of men, and 22.9% of women in 2002, entered the university with the intention of obtaining a doctorate. The numbers of doctorate seekers rose dramatically for those students who identified as the “highest 10%” for spirituality, to 31.3% of men and 32.1% of women. Law and medical degree aspirations remain largely unchanged.

* Catholic students, as well as students reporting non-Protestant Christian faiths or non-Judeo-Christian faiths (such as Hinduism and Buddhism) reported more “religiousness” than other students. While Catholic students did not report higher levels of “spirituality” than the student population, these other student groups reported higher spirituality.

* Students reporting no religious faith tradition reported vastly lower levels of “spirituality” than other students. This might contrast with a notion of many students that they will focus on spirituality without involvement with organized religion. (Matney, 2004, p. 2)

According to the University of Michigan website, faith is important at the campus (Ginsberg Center, n.d.b). College campuses bring together diverse student populations
that reflect the multicultural makeup of American society. Experiences in college can shape students’ attitudes and worldviews (Cohen & Eisen, 1998). When it comes to faith identity, the University of Michigan is unique. The University of Michigan has one of the largest Muslim and Jewish populations on a U.S. university campus (Ginsberg Center, n.d.a).

The University of Michigan is a place where conversation about culture and faith has not always been part of the discussion. In this context, the Ginsberg Center—in partnership with the Association of Religious Counselors, the Michigan Community Scholars Program, the Program on Intergroup Relations, the Ecumenical Center & International Residence, and with support from the vice president for student affairs—launched a program called Interfaith Action at the University of Michigan, dedicated to the intersection of faith identity, service work, social justice, and dialogue (Ginsberg Center, n.d.b).

In early 2008, student leaders, staff from the division of student affairs, Association of Religious Counselors, and selected University faculty from the Ginsberg Center, the Michigan Community Scholars Program, and elsewhere participated in a training on interfaith dialogue by the Interfaith Youth Core (Ginsberg Center, n.d.a). The training was funded by a Ford Foundation Difficult Dialogues grant. The students and staff who participated left the training with a desire to create a more ongoing presence to support service learning and dialogue on culture and faith on campus (Ginsberg Center, n.d.a). Interfaith Action is staffed by an AmeriCorps service member and brings students from diverse cultural, religious, and nonreligious backgrounds together.
Interfaith Action’s student leaders work to strengthen understanding of religious diversity through service and dialogue. Interfaith Action’s goal is to create a safer, more supportive and more inclusive campus. The program offers monthly activities, a multifaith alternative spring-break trip, and is connected to student groups and university offices across campus (Ginsberg Center, n.d.a).

E. Religious Aspects

In the college-student research literature, questions about spirituality are considered central, but at the same time are often skirted (Love & Talbot, 1999). Spirituality is often conjoined with the term “religious.” The word religion can sometimes be referred to as “faith” or “belief system.” Religion is a collection of cultural systems and worldviews that establishes symbols that relate to humanity in a spiritual and moral-value way (Barton, 2007). The practice of a religion may include sermons, sacrifices, celebration of the activities of a God or Gods, festivals, feasts, funeral services, wedding services, meditation, music, art, initiations, dance, public service, or other aspects of human culture (Astin et al., 2010).

Faith development refers to the growth and change that can occur throughout the course of one’s lifetime. It involves the structures or patterns of faith rather than content. It involves moving through stages of cognitive and psychosocial development rather than looking at what someone believes (Astin & Astin, 2003a).

Fowler (1981) placed a stronger emphasis on the stages of faith and the psychology of human development and quest for meaning by looking at how a young adult develops and can flourish. Fowler also described the significance of mentoring environments to support young adult growth and development. Fowler articulated six
“psychosocial and faith stages” that correspond to and overlay the stages of human development identified by previous authors and conversation partners. Fowler named these stages:

- Pre-stage: Undifferentiated faith (infancy).
- Stage 1: Intuitive-projective faith (early childhood).
- Stage 2: Mythic–literal (schoolchild years) stage.
- Stage 3: Synthetic-conventional faith (adolescence).
- Stage 4: Individualize-reflective faith (young adulthood).
- Stage 5: Conjunctive faith (midlife and beyond).
- Stage 6: Universalizing faith.

First is the importance of story and narrative, beginning in Stage one and continuing through Stage five. This is significant on at least two levels. Students encounter new stories in a new environment, and they need to grapple with their meaning. Some students experience familiar stories but discern new dimensions of meaning. Some students compose new chapters in the unfolding narrative of their own lives as a result of their participation. The importance of story and narrative is critical to understanding how they perceive the meaning of the experience for their faith and life. Second and closely related is the development of the capacity for critical reflection. The correlation between the degree of reflection on and the successful integration of the experience in some participants’ faith and life is high.

Third is the development of the imagination, and the ability to comprehend and use symbols as bearers of meaning. Students have to use their minds, their ability to manipulate, deconstruct, and reconstruct symbols, in order to make sense of these new
images. Fourth is the importance of relationships with peers, new acquaintances who differ from themselves, communities and authoritative persons associated with birth and nurture, and God. Fowler’s (1981) definition of faith is a person’s way of seeing themselves in relation to others against a background of shared meaning and purpose.

Fifth is the “formation of a vocational dream” in Stage 4. Participants often talk about the implications of their experience in association with their future vocational pursuits. Sixth is the matter of transitioning from one stage to the next. Such moves are typically precipitated by some event, internal or external, that causes disequilibrium and/or disorientation. Some service-learning theorists and practitioners place great emphasis on “disorienting dilemmas.” There exist significant resonances between the transition from one stage of faith to another in Fowler’s theory of faith formation and the importance of disorienting dilemmas in the pedagogy of service learning.

These resonances provide a significant point of contact between the biblical-theological and social-behavioral frames of reference for this research project. When faith is defined as the matrix of meaning that human beings construct, negotiate, disassemble, and reconstruct throughout their lives as they seek to make sense of the world, their lives, their relationships with others and God, the significance of these six elements of Fowler’s (1981) model become apparent.

F. Parks and the Spiritual Development of Young Adults

Focusing on the faith formation specifically of young adults, Parks’s (2000) work both stands within and critically elaborates the interdisciplinary study of faith development pioneered by Fowler (1981). Parks differed from Fowler in two ways that are important to the purposes here. First, where Fowler described the movement to
mature adult faith as a three-step process (Stages 3–5), Parks saw this developmental journey as a four-step process. Parks believed a young adult’s way of making meaning may be discerned in the often murky and overlooked territory between conventional faith (Fowler’s Stage 3) and critical-systemic faith (Fowler’s Stage 5). In Fowler’s fourth stage there are two separate, identifiable stages. Between the assumed knowing of Stage 3 and the critical, systemic knowing of Stage 4’s “full adulthood,” one can see the outlines of a critically aware, yet young, adulthood. Second, Parks encouraged scholars to think beyond the stages of faith development. Experiences that take emerging adults from their comfort zone and immerse them in new and unfamiliar situations contribute to the process of renegotiating meaning chronicled by Parks. When such experiences are enriched by life in close community with peers and potential mentors, participants’ developmental and affinitive needs are addressed, and the potential for expanding young adults’ horizons of meaning is multiplied. These same experiences allow students to adjust the lenses through which they view the world, themselves, God, and the things of God. Such an adjustment corresponds to Parks’s description of the very essence of young adulthood.

Bishop (1995) developed a deep reverence for the experience of suffering in young adult lives and discovered that these experiences often became the context in which big questions emerged in powerful ways. Therefore, Bishop also observed in young adults a surprising hunger for imagining what possibilities could occur.

Young adult students often make visible the readiness to risk something big for something good. Kerr (1991) began thinking more deeply about the formation of vocation and the concept of giving one’s life for a cause that offered a sense of worthy
purpose. Pascarella and Terenzini (2005) asked how one’s culture can begin to address the tasks of the young-adult years more adequately so we can support the formation of a truly successful adulthood, rather than not asking big enough questions about the potential and vulnerability of young-adult lives. Young adulthood is the time for the formation of choosing a major or the exploration and discovery of a student’s vocation or calling. Higher education also requires an environment that provides the right mix of challenge, support, inspiration, and opportunity (Rhodes, 2006).

G. Service Aspects

Service-learning is a method of teaching, learning, and reflecting, throughout the community (Hara, 2010). As a teaching method, it falls under the philosophy of experiential education. Specifically, it integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, encourage lifelong civic engagement, and strengthen communities for the common good. The Community Service Act of 1990, which authorized the Learn and Serve America grant program (U.S. Government, 1990), defined service-learning in the following way:

A method under which students or participants learn and develop through active participation in thoughtfully organized service that is conducted in and meets the needs of a community; is coordinated with an elementary school, secondary school, institution of higher education, or community service program, and with the community; and helps foster civic responsibility; and that is integrated into and enhances the academic curriculum of the students, or the educational components of the community service program in which the participants are
enrolled; and provides structured time for the students or participants to reflect on
the service experience. (Sec. 40)

Service learning has a great number of benefits to all the participants involved:
the students, faculty members, the university community, and greater-community
organizations. For higher education institutions, service learning has been known to
increase retention and engage students more fully in their campuses and their
communities (National Service Learning Clearinghouse, 2012). For community agencies,
service learning helps meet the very real needs of clients. Community agencies can see
college students, and indeed, the university, in a new, positive light. For students, service
learning has been known to engage students more fully on their campuses and in their
communities; they can achieve higher academic goals, and the collaborative nature of
many service-learning activities can help students understand how their collegiate
experiences prepare them for real-world work experiences.

There are hundreds of resources on the web that can be helpful to someone
creating service-learning experiences for students. University of Michigan students can
retrieve information about service learning from the following journals.

- *Learn and Serve America’s National Service-Learning Clearinghouse*
- *Campus Compact*
- *Michigan Journal of Community Service Learning*
- *Reflections: A Journal of Writing, Service-Learning, and Community Literacy*

Service-learning experiences can change students and help them balance what
they are learning in university courses, what they already know, and what the community
can teach them. In the process of attaining balance, students volunteer their time, and can
have life-changing experiences; these experiences can keep their learning experience fresh and relevant, keep students energized in a way that academic work doesn’t get boring, and keep their perspectives in check.

A student might volunteer their time at the following organizations:

• A local food pantry
• Youth sports leagues
• Girl/Boy Scouts
• Habitat for Humanity
• Domestic violence shelters
• Homeless shelters
• Neighborhood Watch

As colleges across the country honored their graduates in the commencement season, the Corporation for National and Community Service honored The University of Michigan as a leader among institutions of higher education for their support of volunteering, service learning, and civic engagement. The University of Michigan was admitted to the 2010 President’s Higher Education Community Service Honor Roll for engaging its students, faculty, and staff in meaningful service that achieves measurable results in the community.

Men and women at the University of Michigan are similar in many respects. Higher religiousness and spirituality, as the students assess themselves, are linked to greater volunteerism and more discussion of religion before college. Several areas of self-confidence are positively associated with both higher religiousness and higher spirituality, including academics, leadership, popularity, intellectual self-confidence, social self-
confidence, and self-understanding. Men and women rating themselves higher in spirituality also demonstrate desires to achieve in performing art, influence social values, raise a family, help others in difficulty, be a community leader, and understand other countries and cultures.

The Ginsberg Center at the University of Michigan completed the University’s application to the Honor Roll, highlighting several programs of service including America Reads, the Detroit Project, and the Law School’s legal clinics (Ginsberg Center, n.d.a). The Center recorded service hours from hundreds of service-learning courses and student groups, finding that University of Michigan students offered at least 900,000 hours of service to their communities in formal university programming alone.

On campuses across the country, service learning is being redefined (Estanek, 2006). Researchers Astin and Astin (2003b), in their project entitled *The Spiritual Life of College Students: A National Study of Students’ Search for Meaning and Purpose*, defined spirituality as growing inwardly by helping others by serving. Throughout campuses, millions of college students are engaged in innovative projects to meet local needs, often using the skills learned in classrooms. In 2009, 3.2 million college students dedicated more than 307 million hours of service to communities across the country, service valued at more than $6.4 billion (National Service Learning Clearinghouse, 2012).

The Corporation for National and Community Service oversees the honor roll in collaboration with the U.S. Departments of Education and Housing and Urban Development, *Campus Compact*, and the American Council on Education. Honorees are chosen based on a series of selection factors, including the scope and innovation of service projects, the extent to which service learning is embedded in the curriculum, the
school’s commitment to long-term campus–community partnerships, and measurable community outcomes as a result of the service.

H. How Students Make a Choice in Choosing a Major

Some students begin college knowing exactly what they will choose as a major. Other students don’t know what to choose as a major, or have career goals but don’t know which majors will make them successful. In fact, most students find themselves switching majors several times during college (Boyd, 2010).

According to the premier college-bound website (Early Alert System, 2010) on the Internet, the main contributing factors for students who drop out are choosing the wrong major, homesickness, educational burnout, academic unpreparedness, personal or family issues, financial constraints, incorrect institutional fit, and lack of guidance or mentors.

One reason students are undecided in choosing a major could be because many students enter college underprepared for the demands of accelerated learning. According to an Achieve survey in 2002, 39% of recent graduates enrolled in college and 46% in the workforce say there are gaps from their college preparation because they chose the wrong major. Further, employers and professors say that out of 10 graduates, four are underprepared for college (American Diploma Project, 2002).

As stated before, another reason why some students may drop out of college is because they don’t know what their purpose is in choosing a major (Porter & Umbach, 2006). Some factors may include, but are not limited to, the student not knowing who they are spiritually (Holland, 1985). Another factor in a student perpetuating retention is the lack of guidance provided to a student deciding what to choose as a major. This aligns
with spiritual-quest theory in searching, developing, finding, seeking, becoming, and attaining. Researchers such as Astin et al. (2010) have found that a growing number of college students are, however, participating in a variety of activities that, in one form or another, provide gateways to the inner life of reflection and self-examination. However, faculty and staff are hesitant to give students spiritual advice about choosing a major (Braskamp et al., 2006).

Historically, higher education has placed unquestioned trust in colleges and universities, allowing members of the academy considerable freedom to pursue their work (Chickering & Zelda, 1987). Today, however, society is also voicing more loudly the claim that faculty have a social responsibility to contribute more fully to the well-being of their institutions, their students, and the larger community. With enrollment uncertainties, financial cutbacks, pressures for accountability, and the increasing prevalence of part-time and nontenure-track faculty appointments: there are many more pressures on the new generation of faculty to be more expressive, inclusive, and responsive. At these critical moments for the professoriate, questions of meaning, purpose, connection, and authenticity are more critical than before.

Palmer (1998) called for creating “communities of truth,” where creative conflict draws on the knowledge of the group, protected by the “compassionate fabric of human caring itself” (Palmer, 2007, p. 20). In such places, Palmer advocated exploring the spiritual dimension of teaching, learning, and living wherein occurs the ancient and abiding human quest for connectedness with something larger and more trustworthy than our egos—with our own souls, with one another, with the
worlds of history and nature, with the invisible winds of the spirit, with the mystery of being alive. (1999, p. 6)

Love and Talbot (1999) admonished student-affairs professionals in particular to be open with issues of spiritual development in students. Perhaps this challenge dictates that professionals see their work differently, not so much as training professionals for a particular field, but as guiding individuals to discover their own sources of connectedness to something larger and more trustworthy in their lives.

One trend that affects a student choosing a major in this present generation is the economic realities of working in a brittle economy. It has become more complex to work out issues of vocation and purpose when there is less confidence that the economy will hold steady, making choices for the future of our young adults seem more challenging (Parks, 2000). Students may ask whether there is a place for them in the new economic order. One of the tests of a culture is its capacity to receive its idealistic youth, and our culture is failing this test wherever “success” is equated with monetary reward alone (Palmer, 2011). A byproduct of this trend is the alteration of young adults who now have to learn to market themselves in order to be successful in the complex world. Young adults are encouraged to focus more on resume building and networking rather than being supported in exploring the many possibilities of who they can become (Palmer, 2011). This economic trend constrains the imagination of young adults at a time when they otherwise are most able to discern and claim a worthy major. If, however, young adults have the opportunity to explore religious/spiritual traditions in ways that not only tolerate, but also welcome big questions and encourage depth of practice, a more adequate understanding and a committed faith can be composed (Parks, 2000).
The insight of the emerging epistemology is that all knowing is inevitably also a valuing (Lindholm, 2007). Lindholm, contended that the academy is, by intention or default, a community of imagination in recomposing knowledge and faith. In such a community, each syllabus can function as a professor’s testimony or confession of faith. This will declare what the professor believes to be of value, what insights they have, what theories they believe in, and methods of inquiry faculty members have found to lead toward a worthy apprehension of truth (Murphy, 2005).

Palmer (1998), for example, in his book *The Courage to Teach*, wrote about the emotional and spiritual dimensions of life and the unique opportunity educators have to help students develop their capacity for connectedness, responsiveness, and accountability. Similarly, Lowery (2005) maintained that by examining issues of purpose and meaning in the context of the campus environment, acknowledging the multiple aspects of self that operate simultaneously in individuals, and celebrating the diverse experiences that people bring to their encounters with one another, colleges and universities have tremendous potential to shape society positively.

One challenge that faculty members face in facilitating less-well-studied and -understood aspects of student development is in identifying the educational tools that are most useful in achieving desired outcomes. A related challenge for faculty is developing the personal expertise to use these potentially new teaching and evaluation methods effectively. Recently, there has been a proliferation of work that addresses considerations related to addressing the spiritual component of student and faculty lives (Lowery, 2005). Additional work that relates empirical research findings to purposeful curricular and institutional change is greatly needed.
Researchers like Palmer (1999), Parks (2000), and Astin et al. (2010) advocate that all need to serve as spiritual guides, whether by accident or conscious effort. It is inevitable that in some way, higher education is to be a worthy place of investment, and stand in testimony to students to draw arrangement of meaning. It is important that students learn apprehensions and convictions of truth in a manner that encourages dialogue with their emerging inner authority (Lindholm & Astin, 2006). This can be done so that the spirit of the student can find fitting forms in which to dwell.

The rapidly changing higher education landscape presents significant and, in some ways unprecedented, challenges. However, the shifting environment of higher education also offers tremendous opportunity. It is important to create college and university environments that inspire students, faculty, administrators, and staff to strengthen their sense of connectedness and to challenge themselves and each other to be consistently responsive and accountable (Astin et al., 2005). How each individual defines spirituality is of far less significance than collectively making efforts to create integrated lives. Such a culture change requires individual’s minds and hearts to be open to new ideas and new ways of being, and encouraging students to do the same. Educators, parents, and students alike must be involved in the choice of major.

I. Parent Involvement

In line with general theories on benefits of parental warmth and support for adolescent adjustment (Barber et al., 2005), a growing number of studies have consistently shown positive concurrent and longitudinal associations between support and exploration in choosing a major (Dietrich & Kracke, 2009; Dietrich, Kracke, & Nurmi, 2011; Kracke, 1997, 2002; Kracke & Noack, 2005; Neuenschwander, 2008). It has
further been suggested that the relationship between parental interference and exploration could be more specific, depending on the type of exploration behavior. On one hand, it has been assumed that adolescents experience anxiety and indecision as a consequence of parental pressure, which might contribute to more ruminative or broad exploration (Luyckx, Soenens, Goossens, & Vansteenkiste, 2007). Adolescents’ inability to commit to a certain option might also elicit parental overcontrol.

On the other hand, parental interference might not be effective in stimulating deep exploration activities or even might be counterproductive. Research in the career domain has shown, however, that parents’ controlling or interfering behaviors resulted in higher levels of broad and deep exploration in the final school year (Dietrich et al., 2011). During choice-of-major transitions, potential benefits of parental involvement could depend on its timing and on the situation-specific adequacy of the involvement. It is likely that parent involvement fluctuates across situations, such that parents adapt their actions to the situation of their child. This has been theoretically described as parental other-regulation, which complements the child’s engagement, that is, self-regulation (Dietrich et al., 2011). Moreover, it has been suggested that parents’ involvement might also influence adolescents’ satisfaction with their studies, with support and accommodation relating to higher satisfaction, and with directing and interference to lower satisfaction. Thus, parental involvement can be expected not only to interact with youths’ engagement but also to benefit their satisfaction with the progress of the transition.

Students often identify their parents as a primary source of support in choosing a major. Helping an 18 to 22 year old choose a major in college can be a challenging task
Hutchins (1936) found, in empirical research of general education, that the student would come to the end of the sophomore year with a solid knowledge of the foundations of the intellectual disciplines. The student would be able to distinguish and think about subject matter, and be able to use language and reason. With a worldview, the student would have some understanding of humans and what connects humans to humans, and have acquired some degree of wisdom.

Hutchins (1936) also believed that a common aim of all parts of a university should be the pursuit of truth for its own sake. Real unity can be achieved by a hierarchy of truths that show people which are fundamental truths and which are subsidiary, which are significant truths and which are not. The liberal arts train the teacher how to teach, organize, express, and communicate knowledge.

Former generations would choose an occupation that would sometimes result in working in the same place for 30–40 years. The way new graduates are searching for work currently is markedly different from the job search of 10 or 20 years ago.

Although the choice of major search may seem daunting for students, once students get more familiar with the process, they become confident in their ability to succeed. Parents can help their students prepare for what is next. Parents can encourage students to use the resources available on campus, and take pride in what they have accomplished in their time at their institution.

Men who rate themselves higher in spirituality report significantly higher numbers of fathers and mothers with graduate degrees (Turner & Bowen, 1999). If one is coming in as a student, particularly a male student at the University of Michigan, they are coming in declaring one of four things (M. Matney, personal correspondence, September
54

14, 2012): 50% of male students declare business, engineering, pre-medicine, and pre-law majors. Women are less decided. Within about a year or two, they start breaking away from their fathers in this regard. At the same time, they follow their mothers more closely in religion (M. Matney, personal correspondence, September 14, 2012). Similarly oriented females were less likely to have parents with graduate degrees. However, women rating themselves higher in spirituality reported higher desires to make theoretical contributions to science than other women, whereas men reported the reverse. Interestingly, the desire to contribute to science in either case did not align with parental academic achievement. There are many ways to improve choosing a major when adding a spiritual component of searching, developing, finding, seeking, becoming, and attaining.

**J. New Forms of Spiritual Search and Practice for Students**

Colleges and universities are engaging in ways to understand new and better forms of spiritual search for students (Astin, 2004). Research suggests that colleges and universities respond to student spirituality in a variety of ways that reflect their institutional missions and their concern for students’ holistic learning and development. In an earlier study of a national sample of vice presidents of student affairs (Dalton, 2003), most reported that they found an increased interest in spirituality on the part of students, especially in areas such as new student organizations with a spiritual focus, meditation, requests for speakers and programs on spirituality topics, more opportunities for yoga, the need for more quiet space on campus, and reflection (Astin et al., 2006).

When researchers Bryant and Schwartz (2007) examined the responses of vice presidents on college campuses, it was evident that their approaches to dealing with student spirituality reflected their institution’s type and mission. For example, private
faith-oriented colleges and universities were among the most active in responding to faith seekers through traditional activities such as study of religious texts, worship, prayer groups, religious speakers, and retreats (Bryant & Schwartz, 2007). These activities were typically provided in the context of a particular faith-centered tradition. Private nonsectarian colleges supported faith seekers but generally through an emphasis on interfaith and interreligious programs and services and interdenominational worship activities.

Public colleges and universities supported faith-seeking students through a variety of indirect student-support services. Public institutions provided information about campus and community religious organizations associated with the institution as well as access to campus meeting facilities and student information. Public institutions also sponsored programs and provided facilities for secular forms of spirituality such as meditation, contemplation, yoga, and wellness activities. Researchers Bryant and Schwartz (2007) found that private, private nonsectarian and public colleges and universities all provide support for secular seekers, but private nonsectarian and public institutions were most active in this area because this form of spirituality seeks to avoid any direct affiliation with religion.

Many students trying to seek this inner life of spirituality take courses that are often very popular and frequently offered in freshman-year classes and living–learning programs that help prepare new students for academic and social life in the university. Examples of classes on spirituality can be found in both private and public colleges and universities.
It is essential to recognize higher education as a mentoring environment where young adults search for meaning, purpose, and faith during their formative college and university years (Parks, 2000). The academy may be understood as an environment where multiple mentoring communities serve the process of moving from adolescence into a significant adulthood. Mentoring communities can take many forms including a class or course, a laboratory, an athletic team, or a residence hall, among other places and programs. These communities become spaces where students feel truly seen as whole persons, appropriately supported, challenged in timely and fitting ways, and inspired to embrace worthy aspirations. As students move into graduate and professional education across all sectors, mentoring environments continue to play a vital role in the ongoing development of young-adult lives (Parks, 2000).

In well-crafted mentoring environments, big questions are present, there is access to worthy dreams, and young adults are invited to imagine a future that can hold significance and purpose. In a communal context offering the company of others, bigger questions can be engaged, and shared learning can foster a higher probability of sustained commitment to worthy aspirations. In today’s world, faculty and staff need to be appropriately curious about students as whole people, not only the aspect for which they have a particular responsibility (Light, 2001; Palmer, 2011; Parks, 2000). Faculty and staff need to become present in ways that inspire the best in students and in themselves, without becoming inappropriately distracted by the pressures and successes of their own careers. Higher education is at a very fluid moment in its history, and collectively has new opportunities to reconsider the purposes and vocations of higher education itself on behalf of a future that much is at stake for all.
K. Conclusion

Responding to these challenges requires reaffirming some of what higher education currently does. Even when higher education is equipped with the information that is needed, bridging the gap between spirituality and students’ confidence in choosing a major requires thoughtful consideration. Among individuals and institutions, the capacity for self-reflection is critical in searching, developing, finding, seeking, becoming, and attaining.
Chapter Three

Methodology

A survey-research methodology guided this study using logistic regression because the outcome variable is categorical. Additionally, data from the CIRP Freshman Survey was examined from 2000 to 2011. The University of Michigan was the institution under examination for this study to determine if spirituality related to confidence of major selection, and this study investigated the relationship between a student’s world view and confidence in choosing a major over an eleven year time span. Specific questions on the CIRP Freshman Survey related to student spiritual aspects, religious aspects, service aspects, and student’s confidence of major selection are discussed in this chapter.

Specific research questions addressed in this study are listed below:

R1. What are the spiritual aspects of University of Michigan students depending on their confidence in choosing a college major?

R2. What are the religious aspects of University of Michigan students depending on their confidence in choosing a college major?

R3. What are the service aspects of University of Michigan students depending on their confidence in choosing a college major?

R4. Can involvement in religious activities, spiritual activities, and service activities at the University of Michigan significantly predict choosing a college major?
A. Research Design

A survey-research methodology guided this study. Survey research is one of the most popular methods used in educational research because it can be an effective, economical, and dependable way to obtain the information to answer the questions in this research. A survey-research design’s purpose is to measure attitudes, opinions, self-reported behaviors, and characteristics of a population (Creswell, 2008). An ultimate goal of survey research is to learn about a large population by surveying a sample of that population (Leedy & Ormrod, 2005). The design of a survey allows the researcher to ask a series of questions to participants, summarize their responses using statistical indices, and then draw inferences about a particular population from the responses in a sample (Leedy & Ormrod, 2005).

Further, the design of this study can be classified as a longitudinal survey-research design using correlational methods. The correlation research method is a statistical measure of a relationship between two or more variables that gives an indication of how one variable may predict another. This study is considered a correlational method because it compared how a student’s faith-based worldview predicts confidence in choosing a major. A trend study of the general population was sampled over time; each year a new sample of freshmen students was selected. Longitudinal research designs involve repeated observations of the same variables over long periods of time—at least one decade (Creswell, 2008).

B. Methods

a. Data collection and instrumentation. Data collection for this longitudinal survey research study was conducted using the CIRP Freshman Survey. Started in 1966
by the American Council on Education, the CIRP Freshman Survey was used in a national longitudinal study of the American higher education system. This survey covers students’ self-reported reasons for attending college and reasons for choosing the institution they are attending, as well as student hopes and expectations for their educational experience. Responses on the CIRP Freshman Survey also provided demographic information such as family background and high school activities, and gave insight into student attitudes and viewpoints regarding selected social issues (HERI, n.d.).

The CIRP Freshman Survey serves an institution in multiple ways. One way this survey informs a campus is to provide an extensive picture of new undergraduate students by giving a trend analysis of entering students’ experiences and attitudes over years (HERI, n.d.). A one-year snapshot is given of entering freshmen students. Analysis of these survey data provides information to 1st-year admitting colleges and schools about their specific students, allowing administrators to see how their students compare to others in the institution and the nation. Survey data are also used in informing colleges and universities of other areas of improvement to key constituents (such as parents, legislators, and donors). University researchers rely on CIRP Freshman Survey to provide baseline data for their studies. Collaborating with other units across campuses, assessment data is linked to other studies allowing for longitudinal student-outcome research and cross-sectional studies by cohort (HERI, n.d.). The CIRP Freshman Survey compares entering freshmen students from participating institutions to the nation and peer institutions, in order to learn more about what different needs students present. Projection of future needs, trends, and traits of undergraduate and graduate students is also provided.
by the CIRP Freshman Survey. See Appendix C for a copy of the 2011 CIRP Survey items.

Full participation of the entire entering undergraduate class is needed for linkages of data from the CIRP Freshman Survey to be made. This serves as a baseline of information (the “before” picture of undergraduate students) and informs the college about the impact of the array of educational opportunities across the institution. By having a full baseline group, institutions have the ability to better study subpopulations of students and gain greater insight into their learning experiences. Additionally, the CIRP Freshman Survey provides for the addition of questions tailored to the specific needs of an institution.

b. Specific CIRP survey questions used in this study. Five specific CIRP Freshman Survey items were used in this study based on their alignment with the variables in the four research questions (spiritual aspects, religious aspects, service aspects, and major choice). In addition, I selected questions on the CIRP Freshman Survey to align with spiritual-quest theory by Torrance (1994): searching, developing, finding, seeking, becoming, and attaining. I assessed if the predictors (spiritual aspects, religious aspects, and service aspects) that were selected and theorized to predict the outcome variable of interest (major choice) when using the data from the years 2000–2011 could be used for this purpose. The CIRP Freshman Survey from each year has the same questions, but the items are not always represented by the same survey numbers. For the sake of simplicity, I refer to the numbers on the questionnaire from the most current year 2011. Below, each variable is defined and the corresponding CIRP Freshman Survey items used to measure the variable are also provided.
c. **Confidence in major selection (outcome variable).** Confidence in major selection refers to a student’s perceived stability in remaining in their initial field of study choice regardless of the field they initially selected. On the CIRP Freshman Survey, confidence in major selection is measured in Question 42 by asking the student “What is your best guess as to the chances that you will change major field?” The categories “no chance,” “very little chance,” “some chance,” and “very good chance” were collapsed by taking a 4-point scale down to a 2-point scale to “possible change of major” and “not changing major.” Confidence in major selection serves as the outcome variable of interest in all research questions.

d. **Spiritual aspects (predictor variable).** Spiritual aspects of a student refers to their perceived connectedness to a higher being and wanting to improve oneself, one’s community, and others around them. On the CIRP Freshman Survey this is reflected on item 41 (developed a meaningful philosophy of life). The categories were collapsed by taking a 4-point scale of “not important, somewhat important, very important, essential” down to a 2-point scale “low importance” and “high importance.”

e. **Religious aspects (predictor variable).** Religious aspects refers to an activity such as attending church, mass, bible study, or other activities that are perceived to draw one closer to God. This is reflected in Item 27 on the CIRP Freshman Survey which is comprised of 26 components and is the “attended religious service” component in this question used to measure this variable. The categories were collapsed by taking a 3-point scale categorized by “not at all, occasionally, frequently” down to a 2-point scale “did not attend religious service” and “attended religious service.”
f. **Service aspects (predictor variable).** Service aspects refers to a student volunteering their time to work. This is reflected in CIRP Freshman Survey Item 42: participate in volunteer or community service work. The response categories were collapsed by taking a 4-point scale of “no chance, very little chance, some chance, very good chance” down to a 2-point scale of “low chance” and “high chance.”

g. **Population and sample.** For this research, the population of freshmen at the University of Michigan was studied. The University of Michigan started participating in this study as soon as the survey began (1966–1976). Although the University of Michigan stopped participating for 17 years, they resumed participation in 1993 after identifying that there was a gap in understanding about why student trends repeated year after year; those trends became a problem for the institution (University of Michigan, 2011). Since that time, University of Michigan students have usually been included as part of the annual national portrait released widely through the media.

The specific population of freshmen that were studied at the University of Michigan was the 2000–2011 entering classes. The sample data originally obtained from the University of Michigan for the years of 2000–2011 was 47,300. The useable data included 38,255 participants. There were 9,045 students that needed to be removed from the equation because they did not provide an answer for at least one of the variables of interest. These students could not be used in the analysis, resulting in a 2.6% nonresponse answer rates (see Table 1). Year of entry was not used as a variable because student demographics over the years remained consistent over time, suggesting no practical reason for assessing the influence of year enrolled as a freshman. See Table 2 for the number of students who took the survey each year.
Table 1

Study Demographics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td>Female</td>
<td>52.2%</td>
<td>22,151</td>
<td>53.4%</td>
<td>2,604</td>
<td>58.6%</td>
<td>1,682</td>
<td>53.2%</td>
<td>1,477</td>
<td>53.4%</td>
<td>1,352</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>46.8%</td>
<td>19,872</td>
<td>46.6%</td>
<td>2,275</td>
<td>41.4%</td>
<td>1,188</td>
<td>46.8%</td>
<td>1,300</td>
<td>46.8%</td>
<td>1,293</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not identified</td>
<td>1.0%</td>
<td>409</td>
<td>0.9%</td>
<td>43</td>
<td>0.2%</td>
<td>5</td>
<td>0.5%</td>
<td>14</td>
<td>0.9%</td>
<td>16</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td>White</td>
<td>70.8%</td>
<td>30,030</td>
<td>69.5%</td>
<td>2,036</td>
<td>74.2%</td>
<td>1,386</td>
<td>73.7%</td>
<td>2,855</td>
<td>69.5%</td>
<td>2,375</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Black</td>
<td>4.5%</td>
<td>1,896</td>
<td>7.4%</td>
<td>365</td>
<td>6.1%</td>
<td>176</td>
<td>4.0%</td>
<td>113</td>
<td>3.4%</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Indian</td>
<td>0.6%</td>
<td>272</td>
<td>0.6%</td>
<td>29</td>
<td>0.9%</td>
<td>26</td>
<td>0.3%</td>
<td>9</td>
<td>0.8%</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asian</td>
<td>14.0%</td>
<td>5,959</td>
<td>12.3%</td>
<td>605</td>
<td>13.3%</td>
<td>382</td>
<td>13.8%</td>
<td>385</td>
<td>13.1%</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hawaiian</td>
<td>1.3%</td>
<td>549</td>
<td>0.9%</td>
<td>42</td>
<td>0.6%</td>
<td>16</td>
<td>0.8%</td>
<td>22</td>
<td>0.6%</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexican</td>
<td>1.3%</td>
<td>560</td>
<td>1.6%</td>
<td>80</td>
<td>1.9%</td>
<td>56</td>
<td>1.6%</td>
<td>46</td>
<td>1.3%</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Rican</td>
<td>0.9%</td>
<td>377</td>
<td>0.9%</td>
<td>45</td>
<td>0.8%</td>
<td>23</td>
<td>0.3%</td>
<td>9</td>
<td>0.9%</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Latino</td>
<td>1.3%</td>
<td>535</td>
<td>1.4%</td>
<td>67</td>
<td>1.8%</td>
<td>52</td>
<td>1.5%</td>
<td>42</td>
<td>1.4%</td>
<td>27</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall population</strong></td>
<td>( N = 42,432 )</td>
<td>( n = 4,922 )</td>
<td>( n = 2,875 )</td>
<td>( n = 2,791 )</td>
<td>( n = 1,868 )</td>
<td>( n = 3,873 )</td>
<td>( n = 3,416 )</td>
<td>( n = 4,440 )</td>
<td>( n = 4,177 )</td>
<td>( n = 4,504 )</td>
<td>( n = 4,815 )</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>2.4</td>
<td>2.161</td>
<td>3.2</td>
<td>3.3</td>
<td>95</td>
<td>2.9</td>
<td>82</td>
<td>2.1</td>
<td>40</td>
<td>1.7</td>
<td>65</td>
</tr>
</tbody>
</table>
Table 2

*Number of Freshman Students Compared to Total Students Enrolled at the University of Michigan Taking the Cooperative Institutional Research Program Freshman Survey Each Year*

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>4,922</td>
<td>11.6</td>
</tr>
<tr>
<td>2002</td>
<td>2,875</td>
<td>6.8</td>
</tr>
<tr>
<td>2003</td>
<td>2,791</td>
<td>6.6</td>
</tr>
<tr>
<td>2004</td>
<td>1,868</td>
<td>4.4</td>
</tr>
<tr>
<td>2005</td>
<td>3,873</td>
<td>9.1</td>
</tr>
<tr>
<td>2006</td>
<td>3,416</td>
<td>8.1</td>
</tr>
<tr>
<td>2007</td>
<td>4,440</td>
<td>10.5</td>
</tr>
<tr>
<td>2008</td>
<td>4,177</td>
<td>9.8</td>
</tr>
<tr>
<td>2009</td>
<td>4,504</td>
<td>10.6</td>
</tr>
<tr>
<td>2010</td>
<td>4,815</td>
<td>11.3</td>
</tr>
<tr>
<td>2011</td>
<td>4,751</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Gender remained stable over the years with slightly over half women and slightly less than half men in each entering class. It must be noted that women exceeded men only in survey response; the University of Michigan has never had an entering class or a student body that had a majority of women (Matney, 2004). Although gender was not examined or found to have any influence on major choice in this study, the literature that has previously examined spirituality in the context of gender has tended to find that women often express more interest in spirituality and rate themselves more highly on measures of spirituality related behaviors and ideals, including those connected to spiritual quest (Bryant, 2007). Other scholars have indicated that undergraduate men tend to express more secular views and behaviors and exhibit lower participation in religious
activities and lower participation in surveys (Buchko, 2004; Pascarella & Terenzini, 2005).

Race/ethnicity remained relatively consistent in this study with the White population always having the most freshmen enrolled (approximately 70%), followed by Asian (approximately 14%), Black (approximately 5%), and close to 1% for the remaining Native American/Indian population, Hawaiian population, Mexican population, Puerto Rican population, and Latino population. The only trends noted are that the Black population seems to be slightly decreasing over time whereas the Asian population is slightly increasing over time. Although race was not used to study its influence on major choice in this study because race remained relatively constant over the years, the literature that has previously examined race and spirituality are scholars (Sanchez & Carter, 2005; Stewart, 2002; Watt, 2003) who focused on the developmental experience of African American undergraduates. Through typically qualitative methods, they tended to find that these students’ religious and spiritual identities often changed during college as they interacted in complex ways with their overall identity development, and that their race played a large role in that process. Other researchers (Bryant, 2007; Gurin, Dey, Hurtado, & Gurin, 2002; Hu & Kuh, 2003) found somewhat different results suggesting less connection between race and spirituality or other developmental outcomes.

C. Data Analysis

The statistical software, SPSS (Version 17.0), was used for all quantitative analyses. Table 3 depicts the research questions, variables, survey-research question–item alignment, and analysis. Descriptive analysis was used for Research Questions 1 through 3. Logistic regression was used for Research Question 4 because it has an outcome
variable that is categorical. Although logistic regression does not require adherence to assumptions about the distributions of predictor variables, there are several assumptions that must be checked in order to run logistic regression analysis (Mertler & Vannatta, 2005).

Table 3

Research Questions, Variables, Survey Item(s), Analysis Matrix

<table>
<thead>
<tr>
<th>Research question</th>
<th>Variables</th>
<th>Survey item(s)</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: What are spiritual aspects of University of Michigan students depending on their confidence in choosing a college major?</td>
<td>PV: Spiritual aspects</td>
<td>Q41</td>
<td>Descriptive analysis</td>
</tr>
<tr>
<td></td>
<td>OV: Major Confidence</td>
<td>Q42</td>
<td></td>
</tr>
<tr>
<td>RQ2: What are religious aspects of University of Michigan students depending on their confidence in choosing a college major?</td>
<td>PV: Religious aspects</td>
<td>Q27</td>
<td>Descriptive analysis</td>
</tr>
<tr>
<td></td>
<td>OV: Major Confidence</td>
<td>Q42</td>
<td></td>
</tr>
<tr>
<td>RQ3: What are the service aspects of University of Michigan students depending on their confidence in choosing a college major?</td>
<td>PV: Service aspects</td>
<td>Q42</td>
<td>Descriptive analysis</td>
</tr>
<tr>
<td></td>
<td>OV: Major Confidence</td>
<td>Q42</td>
<td></td>
</tr>
<tr>
<td>RQ4: Can involvement in religious activities, spiritual activities, and service activities at the University of Michigan significantly predict choosing a college major?</td>
<td>PVs: Religious aspects, Spiritual aspects, Service aspects, OV: Major</td>
<td>Q27, Q41, Q42, Q42</td>
<td>Logistic regression</td>
</tr>
</tbody>
</table>

PV = predictor variable; OV = outcome variable.

Logistic regression tests the ability of a model or group of variables to predict group membership, defined by some categorical dependent variable. In binary logistic regression, the dependent variable must be dichotomous, but the independent variables may be categorical or continuous. Logistic regression predicts the probability of membership occurring, which varies from 0 to 1. A variety of methods can be used to test
and develop different models (Enter, Forward: LR, Backward: Wald, etc.). Although logistic regression requires fulfillment of few test assumptions, data should be screened for outliers and multicollinearity.

D. Logistic Regression Assumptions

According to Mertler and Vannatta (2005) there are four main analytical assumptions when using logistic regression. The first issue is the ratio of cases to variables included in the analysis. Several problems may occur if too few cases, relative to the number of predictor variables, exist in the data. Logistic regression may produce extremely large-parameter estimates and standard errors, especially in situations where combinations of discrete variables result in too many cells with no cases. If this situation occurs, the researcher can collapse categories of the discrete variables, delete any offending categories, or simply delete any discrete variable if it is not important to the analysis (Tabachnick & Fidell, 2005). A second option could be to increase the number of cases to hopefully fill in some of the empty cells.

Second, logistic regression can rely on a goodness-of-fit test as a means of assessing the fit of the model to the data. A goodness-of-fit test includes values for the expected frequencies for each cell in the data matrix formed by combinations of discrete variables. If any of the cells have expected frequencies that are too small, the analysis may have little power (Tabachnick & Fidell, 2005). All pairs of discrete variables should be evaluated to ensure that all cells have expected frequencies greater than 1 and that no more than 20% have frequencies less than 5. If either of these conditions fails, I would have considered accepting a lower level of power for the analysis; collapsing categories
for variable with more than two levels, or deleting discrete variables to reduce the total number of cells (Tabachnick & Fidell, 2005).

A third issue in using logistic regression is that along with all varieties of multiple regressions, logistic regression is sensitive to high correlations among predictor variables. This condition results in multicollinearity among predictor variables. Multicollinearity is a statistical phenomenon in which two or more predictor variables in a multiple-regression model are highly correlated. If multicollinearity is present among variables in the analysis, I would have deleted one or more of the redundant variables from the model to eliminate the multicollinear relationships (Tabachnick & Fidell, 2005).

The fourth issue, when using logistic regression, is that extreme values on predictor variables that should be examined carefully. As with multiple regressions, logistic regression models are very sensitive to outliers. A case that is actually in one outcome category may show high probability in another category. Multiple cases such as this will result in a model with poor fit. Standardized residuals should be examined in order to detect outliers; any identified outliers—those cases with values > 3—should be addressed using standard methods (i.e., deletion from the sample).

E. Delimitations

Delimitations of a study are those characteristics that limit the scope (define the boundaries) of the inquiry, determined by the conscious exclusionary and inclusionary decisions that were made throughout the development of the proposal (Mitchell, Wirt, & Marshall, 1986). The delimitations in this research study include intentionally not considering institutions other than the University of Michigan. Therefore, by sampling a Tier 1 public institution in the State of Michigan, the results may not be generalized to
colleges and universities outside of this specific population. Thus, generalizability of findings from this study to other 4-year Tier 1 colleges, 4-year private colleges, 2-year public, 2-year private or religious-affiliated universities may be somewhat limited.

**F. Survey-Research Limitations**

In any research study, the validity of the results of a research project and the extent that a researcher can draw meaningful and defensible conclusions from the data are subject to limitations (Leedy & Ormrod, 2005). Although this study offers important findings to the literature, to the University of Michigan, and to others considering a relationship between choosing a major and a spiritual component, there were methodological limitations to consider. Surveys allow information to be collected from a sample group and generalized to the population at large. However, those conducting survey research should recognize four potential sources of error: sampling error, non-coverage error, measurement error, and nonresponse error.

**a. Sampling error.** Surveys collect information only from people who are included in the sample. Certain members of the population are deliberately excluded through selection of the sample. Therefore their responses are not obtained. Conclusions about the population at large are drawn from sample survey results. The degree to which a survey does not represent the general population will be the degree of sampling error (Cui, 2003). In this study, all entering students from the years 2000–2011 at the University of Michigan were asked to participate in this study. Although 100% participation was not guaranteed, the response rate was very high (only 2.2% missing data); thus sampling error was minimized.
b. **Non-coverage error.** One of the major reasons that surveys have not been as useful as desired in surveying the general public is because some members of the population can be missed in the sampling frame; they have no chance of being selected into the sample (W. R. King & He, 2006). If current, completed lists of populations were available, non-coverage error would not exist. However, it is very difficult to obtain comprehensive lists of entire populations of interest (Cui, 2003). For this study, non-coverage error is not an issue because all students entering the University of Michigan between the years 2000–2011 were asked to participate in the study. Thus, the entire population of interest was invited to participate in the study upon entrance to the university and non-coverage error is deemed nominal.

c. **Measurement error.** Measurement error results from mistakes made by respondents. It results when respondents fill out surveys but do not respond to specific questions, provide inadequate answers to open-ended questions, or fail to follow instructions telling them to skip certain sections depending on their answers to previous questions. Measurement error also arises from lack of control of the sequence in which the questions were asked, and various respondent characteristics (Cui, 2003). If participants respond in a “socially desirable” fashion rather than responding with their actual belief the researcher could also encounter measurement error. For this study there was a small percentage of participants (2.2%) that failed to respond to some of the items, implying that the items were not too sensitive to garner a response because so few students were eliminated from the sample for this reason. Additionally, items used in this study were straightforward in nature and unlikely to be confusing to participants responding to them. However, to reduce measurement error, 3- and 4-category response
options were reduced to 2-category responses of positive and negative, rather than varying degrees of positive and negative responses that could potentially mean different things to different individuals.

d. **Nonresponse error.** No matter how carefully a sample is selected, some members of the sample simply do not respond to the survey questions. When those who respond to the survey differ on the survey measures from those who do not, nonresponsive error will become a problem. A low response rate does not necessarily lead to nonresponse error. However, whether differences exist between the responding and non-responding segments of the sample is not known when the survey is conducted. In this study, there appears to be a similar representative sample across the years; therefore, there was no strong nonresponse-error issue suggested in this study.

G. **Summary**

This chapter has outlined the research plan for this longitudinal correlational survey study. Descriptive analysis and correlation methods guided this study. A synopsis of data collection includes a discussion of descriptive analysis and correlation methods, and the inclusion of the CIRP Freshman Survey as a data-collection method. Table 1 was given for the crosstabulation of the population size and demographics. Limitations and delimitations were also given for this study. In the next chapter I analyze the results.
Chapter Four

Results

This chapter will present the results by research question in order to thoroughly assess the purpose of this study’s findings on 1st-year University of Michigan freshmen’s faith-based worldview, significantly predicting their confidence in choosing a college major. Descriptive results from Research Questions 1–3 are presented first, followed by logistic regression results for Research Question 4.

A. Research Question 1

What are the spiritual aspects of University of Michigan students depending on their confidence in choosing a college major?

Regardless of spiritual aspects, an overwhelming majority of 90% (n = 30,989) of students indicated there is a possibility that they might make a major change during their college career. Concerning spiritual aspects, regardless of possible major change, half (n = 17,216, 50.2%) of the students reported developing a philosophy of life that had a high importance to them. In analyzing these variables together, crosstabulations showed that nearly half of the students fell into either the possible major change by low-importance category (n = 17,139, 49.8%) or the possible major change by high-importance category (n = 17,293 50.2%). See Table 4 for complete percentages and frequencies of each category in this crosstabs analysis.
Table 4

*Crosstabulation Results for Spirituality (Importance of Philosophy of Life) by Possible Major Change.*

<table>
<thead>
<tr>
<th>Importance of life philosophy</th>
<th>Possible change of major</th>
<th>Not changing major</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low importance</td>
<td>44.8 % (17,139)</td>
<td>5.2 % (1,991)</td>
<td>50.0 % (19,130)</td>
</tr>
<tr>
<td>High importance</td>
<td>45.2 % (17,293)</td>
<td>4.8 % (1,832)</td>
<td>50.0 % (19,125)</td>
</tr>
<tr>
<td>Total</td>
<td>90.0 % (34,432)</td>
<td>10.0 % (3,823)</td>
<td>100.0 % (38,255)</td>
</tr>
</tbody>
</table>

B. Research Question 2

What are the religious aspects of University of Michigan students depending on their confidence in choosing a college major?

Similar to spiritual aspects, regardless of religious aspects, almost all students (90%) indicated there is a possibility that they might make a major change during their college careers. Concerning religious aspects regardless of possible major change, over three quarters (77.6%) of students reported attending a religious service in the last year. Crossing major change and religious aspects showed that more than two-thirds of students (nearly 70%) of the students fell into the category of possibly changing their major by attending a religious service in the last year. See Table 5 for complete percentages and frequencies of each category in this crosstabulation analysis.
Table 5  
*Crosstabulation for Religion (Attended/Did not Attend) Service by Possible Major Change*

<table>
<thead>
<tr>
<th>Major change</th>
<th>Possible change of major</th>
<th>Not changing major</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mod_Rel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not attend religious service</td>
<td>Count</td>
<td>7,723</td>
<td>855</td>
</tr>
<tr>
<td>Within Mod_Rel</td>
<td>90.0%</td>
<td>10.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Within major change</td>
<td>22.4%</td>
<td>22.4%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Total</td>
<td>20.2%</td>
<td>2.2%</td>
<td>22.4%</td>
</tr>
<tr>
<td><strong>Attend religious service</strong></td>
<td>Count</td>
<td>26,709</td>
<td>2,968</td>
</tr>
<tr>
<td>Within Mod_Rel</td>
<td>90.0%</td>
<td>10.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Within major change</td>
<td>77.6%</td>
<td>77.6%</td>
<td>77.6%</td>
</tr>
<tr>
<td>Total</td>
<td>69.8%</td>
<td>7.8%</td>
<td>77.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Count</td>
<td>34,432</td>
<td>3,823</td>
</tr>
<tr>
<td>Within Mod_Rel</td>
<td>90.0%</td>
<td>10.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Within major change</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>90.0%</td>
<td>10.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Mod_Rel = Attended Religious Services.

**C. Research Question 3**

What are the service aspects of University of Michigan students depending on their confidence in choosing a college major?

Again, regardless of service aspects, an overwhelming majority of 90% of students indicated there is a possibility that they might make a major change during their college career. Concerning service aspects, regardless of possible major change, seven eighths (87.5%) of students reported volunteering in some capacity for service in the last year. Major change and service aspects crossed showed that nearly 80% of the students fell into the category of possibly changing their major by helping in community service in
the last year. See Table 6 for complete percentages and frequencies of each category in this crosstabulation analysis.

Table 6

*Crosstabulation Results for Service Aspects by Possible Major Change*

<table>
<thead>
<tr>
<th>Major change</th>
<th>Possible change of major</th>
<th>Not changing major</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MOD_SERVICE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low chance</td>
<td>4,298</td>
<td>543</td>
<td>4,841</td>
</tr>
<tr>
<td>Within MOD_SERVICE</td>
<td>88.8%</td>
<td>11.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Within major change</td>
<td>12.5%</td>
<td>14.2%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Total</td>
<td>11.2%</td>
<td>1.4%</td>
<td>12.7%</td>
</tr>
<tr>
<td>High chance</td>
<td>30,134</td>
<td>3,280</td>
<td>33,414</td>
</tr>
<tr>
<td>Within MOD_SERVICE</td>
<td>90.2%</td>
<td>9.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Within major change</td>
<td>87.5%</td>
<td>85.8%</td>
<td>87.3%</td>
</tr>
<tr>
<td>Total</td>
<td>78.8%</td>
<td>8.6%</td>
<td>87.3%</td>
</tr>
</tbody>
</table>

**Total**

| Count               | 34,432                   | 3,823              | 38,255  |
| Within MOD_SERVICE  | 90.0%                    | 10.0%              | 100.0%  |
| Within major change | 100.0%                   | 100.0%             | 100.0%  |
| Total               | 90.0%                    | 10.0%              | 100.0%  |

Mod_Service = Participate in Volunteer/Community Service Work.

**D. Research Question 4**

Can involvement in religious activities, spiritual activities, and service activities at the University of Michigan significantly predict choosing a college major?

The logistic regression analysis run for this study used forward logistic regression to determine which independent variables (spiritual aspects, religious aspects, and service aspects) are predictors of confidence in major selection (possible change of major, not changing a major). Logistic regression was used because there is a categorical outcome variable. The output examined in this study includes three parts: statistics for overall model fit, classification table, and a summary of model variables provides several
variable statistics that indicate variable contribution to the model: $B$, Wald, $df$, level of significance, and odds ratio. A good-fitting model will typically have fairly low values for -2 Log Likelihood, significant model chi square, and variables with odds ratios greater than 1. The three components of output are presented in Tables 7 through 10. The statistics for overall model fit are presented in Table 7 and indicate that all the variables were entered into the model, but only two variables proved to be significant predictors of the outcome: service and spirituality. Model-fit statistics shown in Table 8 are extremely large and reveal a poor-fitting model, -2 Log Likelihood = 30755.545. Table 9 presents the classification table and indicates that the model correctly classified 88.2% of subjects.

The summary of model variables is displayed in Table 10. Odds ratios for the MOD_SERVICE (Exp(B) = 1.069) and MOD_PHIL (Exp(B) = 1.237) revealed little increase in likelihood in confidence in choosing a major when predictors increase by 1.

Table 7

*Model Summary of Community Service and Spirituality.*

<table>
<thead>
<tr>
<th>Step</th>
<th>Improvement</th>
<th>Model</th>
<th>Correct class%</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chi-square</td>
<td>$df$</td>
<td>Sig.</td>
<td>Chi-square</td>
</tr>
<tr>
<td>1</td>
<td>26.528</td>
<td>1</td>
<td>.000</td>
<td>26.528</td>
</tr>
<tr>
<td>2</td>
<td>4.889</td>
<td>1</td>
<td>.027</td>
<td>31.417</td>
</tr>
</tbody>
</table>

Table 8

*Model Summary (Display: At each step selected)*

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell $R$ square</th>
<th>Nagelkerke $R$ square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30,760.434</td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td>2</td>
<td>30,755.545</td>
<td>.001</td>
<td>.001</td>
</tr>
</tbody>
</table>
Table 9

Classification Table (Display: At each step selected)

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Major change</th>
<th>Possible change of major</th>
<th>Not changing major</th>
<th>Percentage correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Major change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible change of major</td>
<td>37428</td>
<td>0</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not changing major</td>
<td>5004</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88.2</td>
</tr>
<tr>
<td>Step 2 Major change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible change of major</td>
<td>37428</td>
<td>0</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not changing major</td>
<td>5004</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88.2</td>
</tr>
</tbody>
</table>

Table 10

Regression Coefficients for Example 1 (Display: At each step selected). Variable in the Equation

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOD_SERVICE(1)</td>
<td>0.220</td>
<td>.042</td>
<td>27.543</td>
<td>1</td>
<td>.000</td>
<td>1.246</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.043</td>
<td>.016</td>
<td>15,617.846</td>
<td>1</td>
<td>.000</td>
<td>0.130</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOD_PHIL(1)</td>
<td>0.067</td>
<td>.030</td>
<td>4.888</td>
<td>1</td>
<td>.027</td>
<td>1.069</td>
</tr>
<tr>
<td>MOD_SERVICE(1)</td>
<td>0.213</td>
<td>.042</td>
<td>25.601</td>
<td>1</td>
<td>.000</td>
<td>1.237</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.076</td>
<td>.022</td>
<td>8,776.279</td>
<td>1</td>
<td>.000</td>
<td>0.125</td>
</tr>
</tbody>
</table>

Mod_Service = Attended Religious Services; Mod_Phil = Meaning Philosophy of Life.

Forward logistic regression was conducted to determine which independent variables (spiritual aspects, religious aspects, and service aspects) are predictors of confidence in major selection (possible change of major, not changing a major).
Regression results indicated that the overall model fit of two predictors (philosophy and service) was questionable (-2 Log Likelihood = 30755.545) but was statistically reliable in distinguishing between life perspectives: (X(1) = 31.417, p < .0001). The model correctly classified 88.2% of the cases.

Even though this model is able to predict 88.2% of the cases accurately, it does not suggest a meaningful model because the model predicts 100% of the students may change their major and 0% indicate they will not change their major. The only reason this model can significantly predict confidence in changing major so well is because 88.2% of students in this analysis indicated they would change their major. In the next chapter, I discuss recommendations and conclusions.
Chapter Five

Discussion, Recommendations, and Conclusion

The purpose of this study was to see whether first-year University of Michigan freshmen’s faith-based worldview significantly predicts their choosing a college major. Additionally, this study will continue to investigate this relationship over an eleven year time span to see whether significant events impact these predictive relationships. The primary research questions that guided this research follow:

R1. What are the spiritual aspects of University of Michigan students depending on their confidence in choosing a college major?

R2. What are the religious aspects of University of Michigan students depending on their confidence in choosing a college major?

R3. What are the service aspects of University of Michigan students depending on their confidence in choosing a college major?

R4. Can involvement in religious activities, spiritual activities, and service activities at the University of Michigan significantly predict choosing a college major?

Combining the relationships determined by the CIRP Freshman Survey in the estimation process, the total effects or overall influence of spiritual-quest theory from the variables in this study emerged. The significance of the total effects shown in the variable in the equation of Table 10 was also determined through logistic regression. As Table 10 displays, community service and spirituality exhibited some overall impact on students’ confidence in choosing a major.
The results of the total-effect calculations for the other variables focused on student spiritual outcomes, religious outcomes, service outcomes, and major change. The variables were broken down into dichotomous variables (example of, “I did not attend religious service” or “I did”). Perhaps most interesting from the perspective of total effect was that the majority of students (90%) believed there was a good possibility they would change their majors. This result indicated greater complexity than could be accounted for by a simple connection between spiritual outcomes and major choice.

A. Community-Service Involvement

I found that measuring high service predicts students will change major and students who are undecided in their major may use volunteer work to help discover them. This finding aligns with literature on positive outcomes from participation in community service (Astin & Sax, 1998; Astin, Volgelsang, Ikeda, & Yee, 2000), connections between community service and spirituality (Battastoni, 1995; Jones & Hill, 2003), and connections between students’ service work and decision making. A number of qualitative studies (Bischetti, 2000; Cherry, DeBerg & Porterfield, 2001; Radecke, 2007; Rhoads & Neururer, 1998) and quantitative studies (Bryant, 2007; Bryant et al., 2003) have shown this to be true.

Results from this study, showed that a direct influence emerged from “participating in volunteer/community service work” and “choosing a major.” Additionally, a very high percentage of students (80%) say that they are going to participate in service work. This finding aligned with the literature review for this study, which found meaningful, direct connections between students’ service work and decision making. Several authors (Bischetti, 2000; Cherry et al., 2001; Radecke, 2007; Rhoads &
Neururer, 1998) discussed a strong connection between these variables. These studies were qualitative investigations focused solely on community service; the relevant themes that emerged were participants’ statements about their sense of spirituality.

In addition to the qualitative studies mentioned above, quantitative studies have also examined the relationship between service work and decision making (Bryant, 2007; Bryant et al., 2003). The results of this study showed a large proportion of students plan to do service work, but only about half think spirituality is important. Throughout the literature, scholars have discussed the relationship between students’ participation in community service and their broader spirituality, rather than noting particular aspects of spiritual quest, like searching for meaning in life or answers to deep questions. As a wider construct, spirituality encompasses many aspects including affective components of connection to other human beings and transcendent relationships to divine beings or concepts of truth. In the recent book by Astin et al. (2010) entitled Cultivating the Spirit, the authors suggested additional research be done in the area of spirituality and students choosing a major and suggested that positive outcomes are related to spirituality. The assumption made here is that community service, because of the intent to help other people, connects more strongly to notions of spirituality. This assumption seems reasonable and probable when viewed in this context.

As stated in the literature review, there are many different types of volunteer activities. Scholars (Battastoni, 1995; Jones & Hill, 2003) focused on student learning previously noted important connections between community service and spirituality. Whether in course-based service work, after-school tutoring, mentor programs, or other avenues of service, contact with individuals who differ racially, socioeconomically,
politically, and religiously are likely to occur. The general connection among all these behaviors suggests that high service experiences predict students will change their major. This link between service activities and students’ confidence in choosing a major is important in finding the overall influence of community-service involvement and the theory of spiritual quest. The results indicated that community service remains an important factor in understanding how these students develop in their spirituality during college.

Service work is often personally rewarding and may lead to reflective moments on the volunteer experience. Volunteer work may lead individuals to consider the meaning and purpose of life and reveal a desire to be a more loving individual, but may not inherently foster goals like maintaining an initial selection of major. Maybe volunteer work helps students decide which field is best. Maybe those students who are somewhat undecided in their major are using volunteer work to help find themselves and possibly this is why they are not confident in their major.

B. Spiritual Aspects

The logistic regression found some supporting connection between the variables spirituality and a student choosing a major. Classified under spiritual aspects in this study, developing a philosophy of life was the second major predictor of choice of major. I found that high philosophy of life predicts students will change major. Perhaps students who are undecided in their major could use philosophy of life as a way to make meaning in their lives. This also aligns with the literature of positive outcomes from developing a philosophy of life (Rhodes, 2006).
In this study, the variable philosophy of life was divided into a dichotomous variable of low importance, and high importance. Half the students thought choosing a meaningful philosophy of life was important. This result brings speculation about the participants in this study. There could there be some confusion as to what the term *developing a philosophy of life* means.

Finding predictive value in students’ philosophies of life supports the finding in the research literature regarding spiritual behavior and identity. Some studies noted that students reported an increase in their interest in spirituality and deepened sense of religious and spiritual identity (Bryant et al., 2003; Lee, 2002). Pascarella and Terenzini (2005) reviewed these and other related findings about the impact of collegiate experiences on students’ religious beliefs and spiritual behavior, and concluded that undergraduate students appear to reconsider their past beliefs and behaviors and integrate them into the emerging spiritual values and practices they adopt for themselves.

Aligning with these scholars, research implies that regardless of spirituality, students think they may change their major. As stated in the literature review regarding identity development, Fowler (1981) discussed the maturation process that individuals’ spirituality undergoes as their meaning-making process deepens from simple to conventional to personally invested stages. Parks (2000) added to Fowler’s work, emphasizing the profound questions that individuals in late adolescence and early adulthood tend to begin asking as they seek to make meaning in their lives and develop a purpose and direction on which they can build their work.

Chickering and Reisser’s (1993) prominent *Education and Identity* outlined how, during college, individuals often begin to more deeply explore their purpose and meaning
in life and the values that will guide them as an essential feature of establishing their broader sense of identity. This search for purpose and exploration of ideals is exactly what occurs in individuals’ spiritual quest, making their spiritual quest an integral component of their broader identity development (Hill et al., 2000).

This study’s findings suggest that participation in community service and developing a philosophy of life may contribute to a student’s confidence in choice of major, and by association, affect identity development and spirituality. It does not matter if students are spiritual, religious, or do community service—they’re all probably going to consider changing their major. Education needs to help students who appear to be religious and involved in community service but are confused about spirituality find college-major stability earlier in their educational careers so that they are not wasting time and money.

C. Religious Aspects

Although the results from this study do not predict whether a student changes a major from a religious aspect, it is noted that 77.4% of all students in this study have attended at least one religious service. This leaves only 22.6% of students who have not attended a religious service. This means that this important topic of confidence in choosing major needs to be discussed in churches, youth groups, and campus student ministry organizations such as Campus Crusade, His House, ACT, and others.

D. Confidence in Choosing a Major

It was assumed that in this study students’ faith-based worldview defined in this study (the combination of spirituality, service, and religious aspects) would have a significant and positive relationship with their confidence in choosing a major. Although
the results from this study do not predict whether a student was likely to change a major from a faith-based worldview aspect, the majority of students (90%) felt they had a good possibility of changing their major. In this study nearly three quarters of students chose a major on the CIRP Freshman Survey and 90% felt they would change their major. This was consistent with the literature that most students switch majors several times (Boyd, 2010).

This problem of students changing their major also aligns with Hutchins (1936) empirical research of general education, which the student would come to the end of the sophomore year with a solid knowledge of the foundations of the intellectual disciplines. The student would be able to distinguish and think about subject matter, and be able to use language and reason.

From the overall group of sampled students, of the three quarters of students who did choose a major on the CIRP Freshman Survey, almost 50% of students said they were enrolled in the college of Literature, Science, and the Arts. This was followed by Engineering having 15% of students, Art and Design having 1.4% of students, Kinesiology having 1.7% of students, Music having 2.0% of students, Nursing having 1.5% of students, and School of Natural Resources and Environment having .5% of students.

This finding directly aligns with Boyd’s (2010) research that most students switch majors several times. This thought also aligns with Hutchins’s (1936) empirical research of general education, finding that the students would come to the end of their sophomore year with a solid knowledge of the foundations of the intellectual disciplines. Students would be able to distinguish and think about subject matter, and be able to use language.
and reason. Their worldview would have some understanding of humans and what connects humans with humans, and they would have acquired some degree of wisdom.

Love and Talbot (1999) admonished higher educational professionals in particular to be open with issues of spiritual development in students. Perhaps this challenge dictates that faculty and staff see their work differently, not so much as training students for a particular major, but as guiding individuals to discover their own sources of connectedness to something larger and more trustworthy in their lives.

E. Limitations

A number of limitations influenced the results and findings of the current study. Most importantly, this study’s results were not generalizable beyond its participants because the original sample was a convenience sample, generated from the CIRP Freshman Survey from the years 2000–2011 at the University of Michigan. Regarding statistical issues, the variables used in this study were limited. Taking data directly from the CIRP Freshman Survey, responses could be assumed to indicate what students believed. Several items were discarded because students did not respond to one or all of the variables.

In addition, participants in this study were selected from the undergraduates at only one research intensive university in southeastern Michigan. These students may be similar in many attributes to undergraduates at other large research universities, but are difficult to compare to characteristics or experiences of those attending liberal arts institutions and community colleges, particularly in the areas of community-service involvement and diversity experiences. Pascarella and Terenzini (2005) exhibited that strong differences can exist among students and their experiences at various types of
institutions. This lack of representativeness of participants from different types of institutions in the sample added to the inability to apply the study’s findings broadly.

Altogether, the convenience-sampling method from a single institution, the number of variables, and the assumptions of what students mean from their answers can all create an imbalance among the mean of results, findings, and overall conclusions from this study that cannot be generalized with confidence beyond this study’s institutional location or even to other students at the university from which the participants were drawn. The outcomes of community service and philosophy of life suggest potential implications for the work of other scholars and practitioners, but they cannot be viewed as offering strong evidence on which additional research and practice should be grounded.

F. Additional Research

Further empirical research needs to be done in this area. Future research in this area could be as follows: Why are so many freshmen at this top-tier university not confident in choosing a major? Students are wasting time and money. The institutions could retain a student if the student knew what direction they were heading in as far as their major.

How do educators help students focus on their major earlier? A program needs to be put into place to help with students deciding what they want to do in life. This will help a student create goals and ambitions in what their passions include.

Which activities and behaviors in community service involvement and philosophy of life experiences have the greatest influence on students? Looking at additional research in this area can define what service involvement does to help students determine what
they want to do in life. Defining philosophy of life experiences will help navigate what empirical research can be proven to help in this area.

When do students stop accepting their parents’ religious worldview to develop their own? Looking at student’s religious worldview and the timeframe of it will help this research know what and when a program would be best suited for a student.

To strengthen and elaborate on the findings from this study, this research needs to be replicated at different types of higher education institutions in other geographic regions. As noted in the limitations, different campus settings influence the developmental experience of college students in powerful ways (Pascarella & Terenzini, 2005), which could suggest that outcomes in this study could differ on other campuses. If this research was compared at small, faith-affiliated, liberal arts colleges that maintain a strong ethos of spirituality, the spiritual-quest component might look different in the arena of choosing a major. Similarly, traditional-aged students at large urban community colleges may experience more significant interactions with philosophy of life but have less time to engage in volunteer activities, resulting in different outcomes. Placing this research in these types of colleges and other institutions could provide a more extensive understanding of the influences that community service and philosophy of life have on a student’s confidence in choosing a major. In reflecting on the influence of importance, the researcher would place order of importance on spiritual development, major second, and focus on institution third.

Expanded and refined variables corresponding to spirituality, community service, developing a philosophy of life, and confidence in choosing a major should all be developed in future additional quantitative- and qualitative-method studies. The items
that comprised the factored variables in this study provided solid and reliable operational definitions for the concepts they represented. Although many important behaviors relevant to these variables were not examined; a large survey, focused on many aspects of student spirituality, was used. Journaling profound and personal questions and giving the students’ definition of “developing a philosophy of life” may help in future research.

Questioning students further about the depth of their engagement in service work and questioning other types of interactions concerning whether their philosophy of life has any spiritual connotation to them would also enhance the research definition of these constructs.

Perhaps the most significant research implication of this study’s findings involves the need to do more research to find out “why” so many freshmen at this top-tier university are not confident in their major decision. What can be done to guide students to stay focused earlier in their educational career? Similarly, the College Students’ Beliefs and Values (CSBV) survey is a follow-up senior survey that could be beneficial in discerning these particular outcomes. The CSBV is a survey that was first administered in 2004 to a subsample of 236 baccalaureate-granting institutions participating in UCLA’s Annual Survey of Entering Freshmen. The revised 2004 CSBV questionnaire, which was a modified version of the 2003 pilot questionnaire, was completed by 112,232 entering 1st-year students as a two-page addendum to the annual four-page CIRP Freshman Survey. In total, the two-page CSBV addendum included 129 items and the regular four-page CIRP Freshman Survey incorporated approximately 30 additional items that addressed aspects of spirituality and religion. Adding these types of items to future
longitudinal survey work and determining how they add to the factors will potentially provide an improved sense of the relationships among these variables.

Another vital implication for further research lies in the need to better understand the activities and behaviors in community-service involvement and philosophy of life experiences that tend to have the most influence on students’ confidence in choosing a major. For example, what and when do students view developing a philosophy of life? How does a student define the term philosophy of life? When do students stop accepting their parents’ religious worldview and seize the moment to explore and develop their own worldview, whether in agreement with parental beliefs or not.

Other examples for community service would be exclusively mentoring one young individual or working solely with a homeless shelter that may produce stronger spiritual development. In addition, self-initiated volunteer activities may differ in effect on spiritual quest from coursework-based service and reflective leaning opportunities, similar to the findings about outcomes from service-leaning on students’ academic engagement, personal values, leadership, and other areas of development (Astin et al., 2000). More extensive understanding of these interactions and behaviors would help define these variables.

Finally, perhaps the most significant implication for additional research on this study’s findings involves the need to build on this quantitative work with in-depth qualitative research into the connections among these variables. Spirituality and its essential core of spiritual quest represent deeply personal and subjectively defined components of human life which cannot be fully explored through surveys. The current study occurred in a large national research project, which suggested meaningful findings
and breadth of understanding regarding spiritual, religious, and service aspects through the lens of spiritual-quest theory. Qualitative research on multiple campuses such as community colleges, private colleges and regional universities will likely add rich detail and provide beneficial context to the findings of this study.

**G. Policy and Practice**

As stated earlier, 90% of incoming freshman at the University of Michigan may change their major. What does this mean for the University of Michigan, or for any other institution? It may mean it is necessary for educators to look at programs that involve self-interest in students knowing who they are and what they want to become. This could help an institution retain students. This concept of retention is supported in literature as one of the most important issues facing higher education today (Carey, 2008). Every student who drops out of higher education “costs a school thousands of dollars in lost investment and future revenue” (Early Alert System, 2010, para 2).

Prior research has shown vast positive outcomes from college students’ participation in community service (Astin & Sax, 1998; Astin et al., 2000) and developing a philosophy of life (Rhodes, 2006). The findings of the current study suggest that these variables add to this list of beneficial effects in a students’ confidence in choosing a major. Engaging in service work and developing a philosophy of life appeared to stimulate these students’ spiritual quest, leading them to ask the “big questions” (Connor, 2007, p. 6; Dalton et al., 2003) of identity and purpose in life; concepts these authors considered essential for colleges and universities to promote among undergraduates.
The results of this study suggest that, as a matter of policy, college leaders may want to consider how spiritual quest fits in their institutional missions, and then make explicit their intention to support it (Chickering et al., 2006). Institutions of higher education tend to include statements in their missions indicating their broad purpose of developing individuals for lives of leadership, service, and learning. Educational leaders may want to examine and encourage questions and conversations about life purpose, and exploration of personal values contributes to institutional mission and educational goals. Having established that connection, educational leaders may wish to determine what types of statements belong in official college materials like catalogs and admission publications to clarify their support for educational practices that actively promote spiritual growth in choosing a major in particular.

To encourage developing philosophy of life experiences, officials could review academic programs such as philosophy, religion, and ethnic and cultural studies to determine how substantial emphasis might be placed on the sharing of ideas and perspectives in classroom discussions and in coursework, whether in large or small class sizes. Final assignments in these classes could foster consideration and reporting by students of the knowledge they gained from developing a philosophy of life. Developing such a philosophy will likely spur deep and personal learning among students in many areas of their lives, including contemplation of values and search for meaning and purpose (Chickering et al., 2006).

For faculty and staff, numerous potential applications for practice arise from the study’s findings. Whenever possible, service coordinators can encourage project participants to reflect on their motivations to engage in community service and to explore
how their activities impact their spiritual-quest-related values and beliefs. Such processing among individuals is perhaps most feasible and powerful during intensive involvement in service, such as service trips during breaks from academic terms. Also, given the findings for these students of a connection between community service and a students’ confidence in choosing a major, academic leaders can attempt to foster interactions among these trips in what the student finds to be most impactful in their spiritual quest.

In the area of philosophy of life, faculty and staff can consider promoting to their students the valuable outcomes from interactions with the anticipated development in their sense of purpose, direction in life, and confidence in choosing a major. Academic leaders can attempt to foster interactions in teaching a student from a spiritual component more about identity, destiny, or calling; personal faith; wholeness; and mattering inside and outside the classroom.

**H. Conclusion**

Overwhelmingly, 90% of incoming freshman students felt that there was a good chance they would change their major at the University of Michigan. Most students (80%) said that they would participate in community service. Half of students thought choosing a meaningful philosophy of life were important; 77.4% of students attended more than one religious service. Community service and spirituality exhibited some impact on confidence in choosing a major. Results yielded greater complexity than could be accounted for by a simple connection between spiritual outcomes and major choice.

Examination of deep, profound questions needs to return to prominence in American colleges and universities (Astin, Astin, Chopp, Delbanco, & Speers, 2007;
Community service, assignments, and classroom discussions of values and beliefs may foster deeper examination of what major to choose. Philosophy of life could be discussed through course assignments and classroom discussions. Institutions should connect spirituality with community service and development of a philosophy of life.

As noted in Chapter one of this study, the early findings of the national Spirituality in Higher Education research project indicated that students who were beginning their undergraduate experience held lofty expectations for their institutions regarding their personal development (HERI, n.d.). More than three fourths of the surveyed students reported they held some or great interest in spiritual issues, and half of them found it very important or essential that their colleges help them find means to express and develop themselves in areas related to their spirituality (HERI, n.d.). Relying on this contemporary data for support, along with a historical analysis of liberal education, numerous scholars have argued that examination of deep and profound questions needs to be returned to a place of prominence in American colleges and universities (Astin et al., 2007; Chickering et al., 2006; Connor, 2007). In sounding the call for a renewed focus on such vital questions, Nash and Murray (2010) asserted that higher education scholars, and leaders need to “match students’ desire to explore the big questions of life with an enthusiasm for engaging these questions inside and outside the classroom” (p. 56).

In Chapter one, the Figure “power of the spiritual quest” used the theoretical framework as the driver to see if there was a relationship between faith-based worldview and freshmen in college having confidence in choosing a major. This theoretical framework supported an investigation into how college students’ community service and
philosophy of life has influenced choosing a major. This study has highlighted college students’ response to the call of a spiritual quest. The results of this study, while limited in strength and generalizability, suggest that participation in community service and developing a philosophy of life lead to a positive relationship in students’ confidence in choosing a major. Stated in more practical terms, the findings indicate that involvement in community service through course assignments and classroom discussions covering values and belief may foster deeper examination by students of what major they choose. Similarly, developing a philosophy of life may be discussed through course assignments and classroom discussions by evaluating the current curriculum to see if it is presented through a spiritual-quest lens for students, so that they can consider their own meaning in life and develop a deeper sense of purpose for themselves in choosing a major.

It appears from this study and other research that there is a gap in understanding how students choose a major. Perhaps the most significant research implication of this study’s findings involves the need to do more research to find out why so many freshmen at this top-tier university are not confident in their major decision. What can be done to help students identify their path and stay focused earlier in their educational career? This could possibly be the responsibility of the P–12 system, but at some point additional work that relates empirical research findings to purposeful curricular and institutional change is greatly needed.

College students’ spiritual quest represents a vital journey through which they contemplate many compelling issues and deep questions of life that come to the forefront during this critical time in their lives. This study suggests that nurturing this quest through community service and developing a philosophy of life may need to be a more
specific and salient priority for colleges and universities when students choose a major. Campus leaders may want to consider initiatives on how they can connect spirituality with community service and developing a philosophy of life. This may not only benefit these students personally, but also aid institutions in their efforts to retain and educate students for personal and social responsibility.
References


Appendix A

State of Michigan—Religion

The history of organized religion in the State of Michigan began with the Roman Catholic Church. The Catholic Church was the only organized religion in Michigan until the 19th century, reflecting the territory’s French colonial roots (Dempsey, 2009). French Canadian Catholics were reduced to a small minority by the influx of Protestants from the United States in the early 19th century. By the mid-19th century, there was a wave of immigration of Catholics from Ireland and, later, from eastern and southern Europe. St. Anne’s parish, in Detroit Michigan, established in 1701, is the second-oldest Catholic parish in the country (Dempsey, 2009).

Change was rapid in the 19th century. The Lutheran Church was introduced by German and Scandinavian immigrants; Lutheranism is the second largest religious denomination in the State of Michigan (White, 2007). The first Jewish synagogue in the state was Temple Beth El, founded by 12 German Jewish families in Detroit in 1850. Islam was introduced by immigrants from the Near East during the 20th century.

According to a survey done in the year 2000, the largest denomination by number of adherents, was the Roman Catholic Church with 2,019,926 parishioners (www.thearda.com). The largest Protestant denominations were the Lutheran Church–Missouri Synod with 244,231 adherents; followed by the United Methodist Church with 222,269; and the Evangelical Lutheran Church in America with 160,836 adherents. In the same survey, Jewish adherents in the State of Michigan were estimated at 110,000, and Muslims at 80,515 (White, 2007).
Appendix B

State of Michigan—Economy

In 2009 the Bureau of Economic Analysis estimated the state of Michigan’s gross product at $368 Billion (www.bea.gov). Some of the major services/products/industries in the State of Michigan include automobiles, military equipment, cereal products, pizza, information technology, aerospace, copper, iron, and furniture. The state’s unemployment rate in May, 2011 was 10.3% (Bruns, 2009).

Ranking fourth in the United States, Michigan has 568,000 highly technical workers, which includes 70,000 in the automotive industry (Medc, 2009). Michigan typically ranks third or fourth in overall research and development expenditures in the United States (www.urcmich.org). Research and development in Michigan comprises a higher percentage of the state’s overall gross domestic product than for any other U.S. state. The State of Michigan has an important source of engineering job opportunities. The domestic auto industry accounts directly and indirectly for one of every 10 jobs in the United States (www.michigan.gov).

Michigan was second in the United States in 2004 for new corporate facilities and expansions. From 1997 to 2004, Michigan was the only state to top the 10,000 mark for the number of major new developments; however the effects of the late 2000s recession have slowed the state’s economy (www.Siteselection.com). Michigan placed third in a site selection survey in 2008, among the states for luring new businesses, which measured capital investment and new job creation per 1 million population (www.Siteselection.com). In August of 2009, Michigan and Detroit’s auto industry received $1.36 billion in grants from the U.S. Department of Energy for the manufacture
of electric vehicle technologies, which is expected to generate 6,800 immediate jobs and employ 40,000 in the state by 2020 (Colakoglu, 2010). Between the years 2007 to 2009, Michigan ranked 3rd in the U.S. for new corporate facilities and expansion (www.urcmich.org).

As leading research institutions, the University of Michigan, Michigan State University, and Wayne State University are important partners in the state’s economy and the state’s University Research Corridor (www.umich.gov). Michigan’s public universities attract more than $1.5 billion in research and development grants each year (Bruns, 2009). Michigan’s workforce is well-educated and highly skilled, making it attractive to companies. It has the third highest number of engineering graduates nationally. Michigan led the nation in job-creation improvement in 2010 (Headaphol, 2011).
Appendix C
Cooperative Institutional Research Program Freshman Survey

### 2011 CIRP FRESHMAN SURVEY

**PLEASE PRINT IN ALL CAPS YOUR NAME AND PERMANENT/HOME ADDRESS (one letter or number per box).**

<table>
<thead>
<tr>
<th>FIRST</th>
<th>MI</th>
<th>LAST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ADDRESS:**

<table>
<thead>
<tr>
<th>CITY</th>
<th>STATE</th>
<th>ZIP</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STUDENT ID# (as instructed):**

**EMAIL (print letters carefully):**

### MARKING DIRECTIONS

- Use a black or blue pen.
- Fill in your response completely.
- Mark out any answers you wish to change with an "X".

### CORRECT MARKS

<table>
<thead>
<tr>
<th>Group Code</th>
<th>Correct Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>

### SERIAL #

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Your sex:</td>
<td>Male</td>
</tr>
<tr>
<td>2. How old will you be on December 31 of this year? (Mark one)</td>
<td>16 or younger</td>
</tr>
<tr>
<td>3. Is English your native language?</td>
<td>Yes</td>
</tr>
<tr>
<td>4. In what year did you graduate from high school? (Mark one)</td>
<td>2011</td>
</tr>
<tr>
<td>5. Are you enrolled (or enrolling) as a: (Mark one)</td>
<td>Full-time student</td>
</tr>
<tr>
<td>6. How many miles is this college from your permanent home? (Mark one)</td>
<td>5 or less</td>
</tr>
<tr>
<td>7. What was your average grade in high school? (Mark one)</td>
<td>A or A+</td>
</tr>
<tr>
<td>8. What were your scores on the SAT I and/or ACT?</td>
<td></td>
</tr>
<tr>
<td>SAT Critical Reading</td>
<td></td>
</tr>
<tr>
<td>SAT Mathematics</td>
<td></td>
</tr>
<tr>
<td>SAT Writing</td>
<td></td>
</tr>
<tr>
<td>ACT Composite</td>
<td></td>
</tr>
<tr>
<td>9. From what kind of high school did you graduate? (Mark one)</td>
<td>Public school (not charter or magnet)</td>
</tr>
<tr>
<td>10. Prior to this term, have you ever taken courses for credit at this institution?</td>
<td>Yes</td>
</tr>
<tr>
<td>11. Since leaving high school, have you ever taken courses, whether for credit or not for credit, at any other institution (university, 4- or 2-year college, technical, vocational, or business school)?</td>
<td>Yes</td>
</tr>
<tr>
<td>12. Where do you plan to live during the fall term? (Mark one)</td>
<td>With my family or other relatives</td>
</tr>
<tr>
<td>13. To how many colleges other than this one did you apply for admission this year?</td>
<td>None</td>
</tr>
<tr>
<td>14. Were you accepted by your first choice college?</td>
<td>Yes</td>
</tr>
<tr>
<td>15. Is this college your (Mark one)</td>
<td>First choice</td>
</tr>
<tr>
<td>17. Military Status: (Mark one)</td>
<td>None</td>
</tr>
<tr>
<td>18. Are your parents: (Mark one)</td>
<td>Both alive and living with each other</td>
</tr>
<tr>
<td>19. Have you worked, or do you feel you will need, any special tutoring or remedial work in any of the following subjects? (Mark all that apply)</td>
<td>English</td>
</tr>
<tr>
<td>20. How many Advanced Placement courses or exams did you take in high school? (Mark one in each row)</td>
<td>AP Courses</td>
</tr>
<tr>
<td>21. What is the highest academic degree that you intend to obtain? (Mark one in each column)</td>
<td>None</td>
</tr>
<tr>
<td>22. How would you describe the racial composition of the high school you last attended and the neighborhood where you grew up? (Mark one in each row)</td>
<td>High school last attended</td>
</tr>
</tbody>
</table>

116
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. Current religiosity preference:</td>
<td>Catholic, Protestant, Jewish, Muslim, Hindu, Buddhist, Other, Not sure, Religious affiliation not specified, Other religion not listed</td>
</tr>
<tr>
<td>27. What is your best estimate of your parents' total annual income?</td>
<td>Less than $30,000, $30,000 to $49,999, $50,000 to $69,999, $70,000 to $89,999, $90,000 to $99,999, $100,000 to $119,999, $120,000 or more</td>
</tr>
<tr>
<td>28. Rate yourself on each of the following attributes:</td>
<td>Below average, Average, Above average</td>
</tr>
<tr>
<td>30. What level of formal education did each of your parents obtain?</td>
<td>Some college, Associate's degree, Bachelor's degree, Master's degree, Doctoral degree, Professional degree</td>
</tr>
<tr>
<td>31. Rate your code of personal conduct in the last year:</td>
<td>Below average, Average, Above average</td>
</tr>
<tr>
<td>32. How much of your first year's educational expenses (tuition, fees, room, and board) will you cover through your own earnings?</td>
<td>None, less than $1,000, $1,000 to $2,999, $3,000 to $4,999, $5,000 to $6,999, $7,000 to $9,999, $10,000 or more</td>
</tr>
<tr>
<td>33. Rate yourself on each of the following attributes:</td>
<td>Below average, Average, Above average</td>
</tr>
<tr>
<td>34. What is the highest level of formal education obtained by your parents?</td>
<td>Some college, Associate's degree, Bachelor's degree, Master's degree, Doctoral degree, Professional degree</td>
</tr>
<tr>
<td>35. Rate your code of personal conduct in the last year:</td>
<td>Below average, Average, Above average</td>
</tr>
</tbody>
</table>
32. Mark only three responses, one in each column.
- Your mother's occupation
- Your father's occupation
- Your probable career occupation

33. Are you (Mark all that apply)
- White/Caucasian
- African American/Black
- American Indian/Alaska Native
- Asian American/Asian
- Native Hawaiian/Pacific Islander
- Mexican American/Chicano
- Puerto Rican
- Other Latino
- Other

34. Mark one in each row:
- Abortion should be legal
- Marijuana should be legalized
- Racial discrimination is no longer a major problem in America
- Same-sex couples should have the right to legal marital status
- Federal military spending should be increased
- Undocumented immigrants should be denied access to public education
- Students from disadvantaged social backgrounds should be given preferential treatment in college admissions
- A national health care plan will need to cover everybody's medical costs
- Addressing global warming should be a federal priority
- The chief benefit of a college education is that it increases one's earning power

35. How would you characterize your political views? (Mark one)
- Far left
- Liberal
- Middle-of-the-road
- Conservative
- Far right

36. In deciding to go to college, how important was it to you each of the following reasons? (Mark one answer for each possible reason)
- To be able to get a better job
- To gain a general education and appreciation of ideas
- To make me a more cultured person
- To be able to make more money
- To learn more about things that interest me
- To get training for a specific career
- To prepare myself for graduate or professional school

37. During your last year in high school, how much time did you spend during a typical week doing the following activities?
- Hours per week:
- Studying/homework
- Socializing with friends
- Talking with teachers outside of class
- Exercise or sports
- Partying
- Working (for pay)
- Volunteer work
- Student clubs/groups
- Watching TV
- Household/duty chores
- Reading for pleasure
- Playing video/computer games
- Online social networks

38. Below are some reasons that might have influenced your decision to attend this particular college. How important was each reason in your decision to come here? (Mark one answer for each possible reason)
- My parents wanted me to come here
- My relatives wanted me to come here
- My teacher advised me
- This college has a very good academic reputation
- This college has a good reputation for its social activities
- I was offered financial assistance
- The cost of attending this college
- High school counselor advised me
- Private college counselor advised me
- I wanted to live near home
- Not offered aid by first choice school
- Could not afford first choice
- This college's graduates gain admission to top graduate/professional schools
- This college's graduates get good jobs
- I was attracted by the religious affiliation/orientation of the college
- I wanted to go to a school about the size of this college
- Rankings in national magazines
- Information from a website
- I was admitted through an Early Action or Early Decision program
- The athletic department recruited me
- A visit to the campus
- Ability to take online courses

39. The current economic situation significantly affected my college choice: (Mark one)
- Agree Strongly
- Agree Somewhat
- Disagree Somewhat
- Disagree Strongly
40. Below is a list of different undergraduate major fields grouped into general categories. Mark only one oval to indicate your probable field of study.

<table>
<thead>
<tr>
<th>ARTS AND HUMANITIES</th>
<th>PHYSICAL SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art, fine and applied</td>
<td>Astronomy</td>
</tr>
<tr>
<td>English language and</td>
<td>Atmospheric Science</td>
</tr>
<tr>
<td>literature</td>
<td>(incl. Meteorology)</td>
</tr>
<tr>
<td>History</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Journalism</td>
<td>Earth Science</td>
</tr>
<tr>
<td>Language and Literature</td>
<td>Marine Science (incl. Oceanography)</td>
</tr>
<tr>
<td>Music</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Physics</td>
</tr>
<tr>
<td>Speech</td>
<td>Other Physical Science</td>
</tr>
<tr>
<td>Theatre or Drama</td>
<td>PROFESSIONAL</td>
</tr>
<tr>
<td>Theology or Religion</td>
<td>Architecture or Urban Planning</td>
</tr>
<tr>
<td>Other Arts and Humanities</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BIOLICAL SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology (general)</td>
</tr>
<tr>
<td>Biochemistry or</td>
</tr>
<tr>
<td>Biophysics</td>
</tr>
<tr>
<td>Botany</td>
</tr>
<tr>
<td>Environmental Science</td>
</tr>
<tr>
<td>Marine (Life) Science</td>
</tr>
<tr>
<td>Microbiology or</td>
</tr>
<tr>
<td>Bacteriology</td>
</tr>
<tr>
<td>Zoology</td>
</tr>
<tr>
<td>Other Biological Science</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BUSINESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
</tr>
<tr>
<td>Business Admin. (general)</td>
</tr>
<tr>
<td>Finance</td>
</tr>
<tr>
<td>International Business</td>
</tr>
<tr>
<td>Marketing</td>
</tr>
<tr>
<td>Management</td>
</tr>
<tr>
<td>Secretarial Studies</td>
</tr>
<tr>
<td>Other Business</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Education</td>
</tr>
<tr>
<td>Elementary Education</td>
</tr>
<tr>
<td>Music or Art Education</td>
</tr>
<tr>
<td>Physical Education or Recreation</td>
</tr>
<tr>
<td>Secondary Education</td>
</tr>
<tr>
<td>Special Education</td>
</tr>
<tr>
<td>Other Education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENGINEERING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeronautical or Astronautical Engineering</td>
</tr>
<tr>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Computer Engineering</td>
</tr>
<tr>
<td>Electrical or Electronic Engineering</td>
</tr>
<tr>
<td>Industrial Engineering</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Other Engineering</td>
</tr>
</tbody>
</table>

41. Please indicate the importance to you personally of each of the following: (Mark one for each item)

<table>
<thead>
<tr>
<th>Importance</th>
<th>Statement</th>
</tr>
</thead>
</table>
| Not Important | Becoming accomplished in one of the performing arts (acting, dancing, etc.)
| Somewhat Important | Becoming an authority in my field
| Very Important | Obtaining recognition from my colleagues for contributions to my special field
| Essential | Influencing the political structure
| | Influencing social values
| | Raising a family
| | Being very well off financially
| | Helping others who are in difficulty
| | Making a theoretical contribution to science
| | Writing original works (poems, novels, etc.)
| | Creating artistic works (painting, sculpture, etc.)
| | Becoming successful in a business of my own
| | Becoming involved in programs to clean up the environment
| | Developing a meaningful philosophy of life
| | Participating in a community action program
| | Helping to promote racial understanding
| | Keeping up to date with political affairs
| | Becoming a community leader
| | Improving my understanding of other countries and cultures
| | Adopting “green” practices to protect the environment

42. What is your best guess as to the chances that you will: (Mark one for each item)

<table>
<thead>
<tr>
<th>Chance</th>
<th>Statement</th>
</tr>
</thead>
</table>
| No Chance | Change major field
| Very Little Chance | Change career choice
| Some Chance | Get a job to help pay for college expenses
| Very Good Chance | Work full-time while attending college
| | Join a social fraternity or sorority
| | Play club, intramural, or recreational sports
| | Play intercollegiate athletics (e.g., NCAA or NAIA-sponsored)
| | Make at least a “B” average
| | Be satisfied with your college
| | Participate in student protests or demonstrations
| | Transfer to another college before graduating
| | Participate in volunteer or community service work
| | Seek personal counseling
| | Communicate regularly with your professors
| | Participate in student clubs/groups
| | Participate in a study abroad program
| | Have a roommate of a different race/ethnicity
| | Discuss course content with students outside of class
| | Work on a professor’s research project
| | Take courses from more than one college simultaneously

The remaining ovals are provided for questions specifically designed by your college rather than the Higher Education Research Institute. If your college has chosen to use the ovals, please observe carefully the supplemental directions given to you.

43. 44. 45. 46.