

THE IMPACT OF STUDENT RELIGION
AND COLLEGE AFFILIATION
ON STUDENT RELIGIOSITY

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By

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LISTING OF VARIABLES AND ABBREVIATIONS

Variable/Abbreviation	Description
ATTSVCHG	Change in Religious Service/Church Attendance
CCCU	Council for Christian College and Universities – also used as a variable to indicate membership in this organization
CIRP	Cooperative Institutional Research Program – initial survey through HERI
CSS	College Student Survey – follow-up survey through HERI
CSSRAT20	Religiousness/Religiosity Compared to Average Person Your Age
CSSRLRC	CSS Religion Recoded
HED	Higher Education Directory – contains affiliation codes
HERI	Higher Education Research Institute – University of California, Los Angeles
NACCAP	National Association of Christian College Admissions Personnel – also used as a variable to indicate membership in this organization
PRYMDCHG	Change in Prayer/Meditation
RELCHANG	Change in Student Religious Preference
RLGDSCHG	Change in Discussion of Religion

LISTING OF VARIABLES AND ABBREVIATIONS

Variable/Abbreviation	Description
RLGSCMP1	Religiosity Composite Change
SHAFFIL	Institution's affiliation coded by Researcher
SIFRELIG	CIRP Religion
SLFCHG07	Change in Religious Beliefs and Convictions Compared to When You First Started College
SPIRTCHG	Change in Spirituality

IMPACT OF RELIGION AND AFFILIATION ON RELIGIOSITY

CHAPTER ONE: INTRODUCTION

Many parents face with trepidation the prospect of their child going to college – any college. Among the myriad of feelings is that the young person will change in a number of ways and possibly ignore or stray from values the family has identified as important including values related to religious convictions. The classic concern expressed by some parents and religious leaders is that even strong convictions could be compromised during the educational process leading to substantial changes in the student's religious commitment and conviction during these years.

The more fundamentalist (conservative) Christian popular print and broadcast media have provided clear examples of this concern. A cursory search of these resources yielded articles, books and radio programs giving instructions and admonitions for the college-bound in order to protect their faith from attack during the educational process. More specifically, during the summer months, fundamentalist Christian radio programs such as *BreakPoint* have presented near daily commentaries on surviving college, fighting temptation, and “how to stand your ground” (Colson, 2002a, 2002b, 2002c). Similarly the recent book *How to Stay Christian in College* (Budziszewski, 1999) has become an important guide for college-bound Christian students dealing with the pressures, demands and pitfalls of college life. These examples and many others have articulated a similar, underlying premise and common theme: the college students' faith, specifically the Christian faith, will be challenged during their college years. These challenges may induce changes in students' commitment to their faith.

These introductory comments were intended to provide some context and general boundaries for the specific purpose statement presented in a following section. Clearly, whether such perceived threats to religious commitment as referenced above were real was well beyond the scope of this study. However, discovering if changes really did occur to students of all faiths, not just Christian, and if they occurred in similar magnitude at institutions of differing affiliations was addressed.

As shown in the review of literature, a variety of authors over many decades have discussed the changes in attitudes, perceptions and values that occur during the college years. For example, Newcomb touched on this topic with his work in 1943. Twenty years of studies cited by Pascarella and Terenzini (1991) provided analyses of why faculty as well as parents expect some change. In general, some of the change has been shown to be the result of the normal maturing process as a person develops his or her personal identity and values (Chickering, 1969). Many parents would expect these changes as their children grow up. However, Pascarella and Terenzini found evidence well beyond this normal expectation and stated that “the ‘search for identity’ is a far more common practice among college students than among similarly aged young people or in the general population” (p. 183). Most pertinent to this study, they stated that research “fairly consistently reports statistically significant declines in religious attitudes, values and behaviors during the college years” (p. 281).

Building from the studies cited above allowed further refining and clarification of the intent of this study. An investigation of past research on the general theme of changing religious attitudes, values and behaviors as indices of changes in religious commitment during the college years is presented in the literature review. A later section

of this study identifies the selected indicators that will be explored and verified through applicable research methods in this study. Because much of the literature has dealt with only the impact of the college experience on commitment to the Christian religion, a need for research beyond this one religion has been identified. Discovering if there was a difference in the degree of change in religious commitment by religion as well as denomination, if applicable, was a major area of exploration. The type of college attended (public, private, etc.) and that college's religious affiliation, if any, was also utilized to study the degree of change in religious commitment.

Definitions

Before going further, it was important to clarify the definitions of some main terms that have been pertinent to this study. A more complete discussion of the past usage of these terms as well as the basis for the definitions used here has been provided in the literature review. The terms that have generated the most potential for confusion and overlap were *spirituality*, *religion*, *faith*, *religiosity*, *religious commitment* and *religiousness*. Some other terms that warranted definition included *born-again*, *college affiliation*, and *college membership*. This study used the following specifically defined terms:

Spirituality was defined as an overall belief, sensitivity or attachment to general spiritual concepts and feelings. Issues related to religion and religiousness were viewed as being subsets of overall spirituality. This term was considered as scalable, meaning that there are degrees of spirituality.

Religion was defined as an institutionalized system of attitudes, beliefs and practices to which a person can be labeled as a member, an adherent or an

endorser of the related set of tenets. Denominations are more specific subgroups within a religion (most typically subgroups of Protestants) or collection of local congregations with similar beliefs.

Faith although often viewed as a general core belief in a supreme being or power (as in “I have faith”) was defined as synonymous with religion. The more specific identification aspect of religion was the meaning used here (as in “I am of the _____ faith”).

Religiosity was defined as the compound term that includes identification with a particular religion as well as the practice of its worship and tenets. This term was scalable meaning that there are degrees of religiosity. The term *religiosity composite change* (or religiosity composite) will be discussed in the methodology as the main measure of the change in religiosity related activities and student self-measures.

Religious commitment was defined as synonymous with religiosity.

Religiousness was also defined as synonymous with religiosity.

Born-Again was defined as a Christian term describing an individual who has made a personal commitment to Jesus Christ as his or her personal savior. Ultimately, student self identification on any survey instrument was used to determine this status if such a question was available.

College affiliation was determined by the type, control and religious connection or commitment of the college. In general use college types include public and private two and four-year proprietary and non-profit institutions. The more specific term of affiliation was chosen for this study to include state, private

non-sectarian, private sectarian, Catholic, and Protestant colleges and universities. Therefore, for this study, the overall term of affiliation was used to include both type and any support or connection to any state or religious entity. The focus of this study was on baccalaureate degree granting institutions, so the type portion of this term excluded colleges not offering four-year programs. Further, Protestant and other private sectarian colleges and universities were identified more specifically if any denominational control, support or connection could be determined.

College membership is determined by the college's membership in at least one of two organizations, the Council for Christian Colleges and Universities (CCCU) or the National Association of Christian College Admissions Personnel (NACCAP). CCCU is "an international higher education association of intentionally Christian colleges and universities" (Council for Christian Colleges & Universities, 2003). At the time of this study, it had 107 members in North America and 62 affiliate institutions in 24 countries. Its mission is "to advance the cause of Christ-centered higher education and to help our institutions transform lives by faithfully relating scholarship and service to biblical truth" (2003). CCCU limits its membership to Protestant liberal arts institutions that fulfill specific requirements including comprehensive arts and sciences programs, regional accreditation, professing Christian administration and faculty, responsible fiscal management and high ethical standards. The National Association of Christian College Admissions Personnel is "an association of admissions officers from more than 120

Christian liberal arts and Bible colleges from throughout the United States and Canada” (National Association of Christian College Admissions Personnel, 2003). According to their web-site, NACCAP seeks to “develop the professionalism, skill, and knowledge of admissions personnel at participating institutions. NACCAP encourages member institutions toward quality in admissions procedures, integrity in the recruiting process, and responsibility in communication with prospective students and families” (2003). Additionally, the organization sets “standards of excellence for Christian college admissions professionals, ultimately advancing God's kingdom by equipping members to skillfully and responsibly direct men and women to a life of service through education at a Christian institution of higher learning” (2003).

A more detailed discussion of many of these terms, and the derivation of the meanings used here is included in the literature review.

Purpose

The purpose of this study was to investigate the relationship of a student’s religion or denomination and the affiliation of the college attended with the degree of change in religiosity over the college years. The methodology section of this study identifies the specific research questions and variables utilized to measure the change in religiosity of the subject sample.

From the literature reviewed, it was clear that there has been much study of the overall change of student religiosity for the general college population. More specific studies of the differences in changes of religiosity by affiliation or type of college

attended have only been investigated for Christian students. Some studies from the early to mid-1970s were cited by Pascarella and Terenzini (1991) that provided overall measurements of change by religion but did not measure this change also by the affiliation of the institution attended. It was the intent of this study to research more completely than previous studies the impact of the affiliation of the college attended on student religiosity for students of all religious preferences as specified at the start of the collegiate experience. This study went beyond the level of previous work because it not only re-explored research based on the type of college attended but also added the specificity of the religion and denomination of the student as well as the college, if applicable.

Research Questions

The research questions for this study are as follows:

1. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the affiliation of the educational institution attended?
2. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the stated religion or denomination of the incoming student?
3. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the stated religion or denomination of the incoming student as well as the affiliation of the educational institution attended?

4. Is there a significant difference between the college student's incoming religion or denomination with that of the student's religion or denomination at the end of the undergraduate college career and the affiliation of the educational institution attended?

As touched on in the purpose section and explained more fully in the literature review, past studies only provided limited answers to the main research questions proposed here. The first question has been explored to some degree for Christian students attending some general types of colleges while this study attempts to study changes in religiosity across a range of college affiliations. The second question was investigated to some degree over 30 years ago and has been updated partially in one recent study. The third question was far more specific than any known question asked to date and combined elements of the first and second questions, yielding the main question of the study. The fourth question asked if there had been measurable migration to other religions or denominations and the degree of that migration. In general, all of the proposed questions were seen as being more specific than those found in any previous study.

Significance

Because the research questions appeared to be in areas with little recent exploration (and, in some cases, no exploration at all), this study improves the understanding of the changes that occur in college student religiosity. First and foremost, because many earlier studies were limited to single institutions, utilizing a much larger sample from many institutions for this study provided answers that potentially can be generalized to a broader portion of college-bound students. All of the research questions related to this point.

Second, confirmation or correction of older studies that showed differences in the degree of change of religiosity by the affiliation or type of institution attended was of paramount importance. These prior studies have been identified and discussed in the literature review section. By utilizing the more up-to-date information included here, families should be able to approximate the potential for change in their college-bound children based on college affiliation. Therefore, the results of this study could influence greatly institutional choice. This area of significance was related to the first and third research questions.

Third, and most critically, because this study combines the dimension of religion and denomination with the affiliation of the college attended, parents and leaders of religions and particular denominations should find this research important. With the results of this study, it should be possible to develop a predictive model of religious change rates of college-bound students by religion and the affiliation of the institution attended. The results of this study could be interpreted as identifying the need for improvements in pre-college religious training as well as the need for increased discussion of foundational religious issues in the homes of college-bound students. This alteration in student preparation for potential college-experience challenges should be important to religious leaders, families and educators. It is expected that religious leaders and educators will find this and similar follow-up studies helpful over time in determining if any adjustments in college experience preparation are having the desired impact. This area of significance relied on the answers found for questions two, three and four.

Fourth, this area of changing religiosity was seen as having tremendous importance because this issue impacted in some way virtually all college students and, most specifically, those incoming students with a substantial religious commitment. To fathom the importance of research such as this, consider the following. In the mid-1980s a nation-wide effort was made by the Christian College Coalition (now called the Council for Christian Colleges and Universities or CCCU) to measure the potential market of students most likely to enroll at its member institutions. The result of this study coupled with further investigation by the National Center for College and University Admissions identified in excess of 300,000 college-bound students who fit the Coalition's criteria (National Research Center for College and University Admissions, 1994). Of that group, annual enrollment reports of Christian college associations such as the National Association of Christian College Admissions Personnel (NACCAP) and the American Association of Bible Colleges (now the Accrediting Association of Bible Colleges) estimated that only about 65,000 of the over 300,000 students enroll at any type of Christian college – leaving nearly a quarter million college-bound conservative Christian students choosing other college affiliations. The first critical factor to keep in mind was that only about 20% of these colleges' identified potential cohort enrolled at any of their member colleges or similar schools while approximately 80% enrolled at public colleges and other private institutions.

Taking this further, Railsback (1994) attempted a preliminary answer as to what happened to Christian students by the general affiliation of the college attended. His study was of major consideration in the literature review. In brief summary, he found that although many “born-again” students (purely Christian terminology) attended Christian

colleges, the vast majority attended non-Christian colleges. Of the group that attended public universities, he found that 34% of those who called themselves born-again at the beginning of their college career no longer did so at the end of that career. An additional 28% of those who still called themselves born-again reported no attendance at any religious meeting in the previous year. Coupling these non-attendees with those who no longer identified themselves as born-again yielded the potential total religious dropout rate from born-again as high as 52% (the 34% and the 28% are of different groups and are, therefore, non-additive without mathematical conversion). Assuming for the moment that among conservative Christians there existed a high correlation of the term born-again and religious meeting attendance with religiosity, the number of students who have experienced a substantial decline in religiosity during the college years may be staggering. This, of course, probably over-stated the situation, because not all non-attendees should be treated as if they were drop-outs from the Christian religion; also, not all Christian denominations identify with the term born-again. However, this was an important finding causing much discussion among Christian educators.

Seeing whether the current change in religiosity is in any way similar to the decline of “born-again” students found by Railsback over a decade earlier has been a critical goal of the present study. However, Lee reported recently that “the widely publicized ‘secularizing’ effect of college on students is over generalized” (2002, p. 376). Lee’s findings were very important because an increase in religious conviction was reported while most other studies to this point have reported a decrease through the college years. Seeing if this new development was an anomaly as well as finding if there are similar change patterns for students of other religions has also been important in this

study. Research questions one through four have all been helpful in addressing this area of significance.

Finally, some significance has been ascertained for those college affiliations identified as having inordinate drops in religiosity of particular religions or denominations. A college should be able to compare its change of religiosity with the norms measured in this study. If found to be far from the mean, this may be an impetus for such a college to assess whether its educational system is properly reflecting its mission of education or moving more toward indoctrination or possibly de-programming from pre-tested levels of religious commitment. It was hoped that through this study, college administrators and faculty will have a greater understanding of the huge impact they have in this area of student life. It was also expected that by finding any factors that correlate to reduced change, students could be encouraged to participate in those activities if changes in their religiosity was not desired. Research question four helped in answering this area of significance.

To further explain the last point, consider this. The classic claim against public institutions by conservatives of all faiths has been that these institutions are a breeding ground for a liberal world-view and liberal bias. As clearly shown from the literature, students are influenced greatly by the values of the faculty where they attend (Pascarella & Terenzini, 1991). Although it was too great of an assumption to conclude that every faculty member at a secular school was non-religious, it was also inappropriate to assume that every faculty member at a religious school was religious. However, it was viewed as safe to assume that there could have been an over-riding ideological culture that was prominent at any given college. The issue that should be explored by secular school

scholars relates to the potential impact of that predominant culture on religious values, commitment and participation of the students that are in its charge. Authors, such as Bloom (1988), have specifically taken to task the public higher education system discussing the frightening impact of a value-less curriculum. Bok (1982) weighed into the debate on the importance of the college's impact on the moral and social development of students. He was concerned with avoiding indoctrination of all types while encouraging the provision of a proper learning environment. Again, it was hoped that the results of the present study will provide comparative measures, good logic and data to promote healthy discussions on those campuses that experience excessive change in student religiosity.

CHAPTER TWO: REVIEW OF LITERATURE

The study of spirituality in higher education is becoming a more popular topic. There is a revival of interest in this subject that Lee (2001, 2002) found was virtually neglected at best and most likely ignored in research. Love (1999) agreed with this assessment by noting that the study of spirituality and religion was conspicuously absent from student development literature finding only one article on spirituality or religion within 15 years in what he identified as the main body of references for the student affairs/student development profession.

Most recently, this lack of attention in the literature has ceased. Tisdell's (2003) recent book and an entire publication of *New Directions for Student Services* (Jablonski M. A. (Ed.), 2001) showed the increasing importance of the topic area. Moreover, the recent annual meeting of the National Association of Student Personnel Administrators (2003) included a number of related sessions. According to Love (1999), this surge in interest represented a more holistic view of the role of student development and an increasing awareness of the importance of spirituality in the lives of students and those who attempt to assist them. Further, the recently launched Spirituality in Higher Education project underway through the Higher Education Research Institute (2003b) at UCLA underscores the current importance of this topic.

To prepare this literature review, a full electronic search of library resources was conducted that identified nearly 1,000 possible references that related to the subject area. These were narrowed by review of title, subject area and abstract to approximately 300 of the most relevant references. A further prioritization was made to narrow these to the most applicable 100 or so references. ERIC (FirstSearch), ERIC Documents On-Line,

Infotlinks, Ebsco Academic Search Premier and Dissertation Abstracts were the most useful. The searches utilized the fixed terms of college and student with variable terms of religious or religiosity. For dissertations, religion was also used as a variable term. All articles, books, and dissertations that appeared to have some relevance to the research questions have been reviewed.

Discussion of Definitions

As mentioned in the introductory pages of this study, it has been deemed of up-most importance to clarify the terms used in this study. Low and Handal (1995) provided a penetrating discourse on the difficulties of past studies in trying to operationally define terms related to the study of religion. Due to the overlapping and confusing usage of these words in survey instruments and the literature, an on-going attempt was made to differentiate what was being studied here from what was reported in any previously cited study. The discussion below includes a repetition of the definitions provided earlier as well as a discussion of the derivation of these terms. As stated in the introductory section, the following terms seem to generate the most overlap and confusion: spirituality, faith, religion, religiosity, religious commitment and religiousness. Although not expanded upon here, the introduction to this study also includes definitions for a few additional terms utilized in this study: college affiliation and born-again.

Spirituality is a broad term and was defined here as an overall belief, sensitivity or attachment to general spiritual concepts and feelings. This term was considered as scalable, meaning that there are degrees of spirituality. Current dictionaries included more emphasis on religion in defining this term. Merriam-Webster narrowed the definition to “sensitivity or attachment to religious values” (*Merriam-Webster's*

collegiate dictionary, 2001, p. 1131). In some contexts this term can be stated as if it were a dichotomous issue that simply answers whether or not one has a core belief or faith or an attachment or sensitivity to religious values.

It is important to note that this term continues to cause much confusion. This term is purposefully highlighted because it was included in the survey instrument utilized for this study. Tisdell's (2003) recent book stated clearly that "spirituality defies definition" (p. xi). Some uses are vague and difficult at best to measure such as Dalton's (2001) reference to "an encounter with 'oneness'" (p. 17). An applicable presentation by Johnson (2003) at the recent National Association of Student Personnel Administrators (2003) conference narrowed down the discussion to simply stating that "spirituality points to the interiors, or subjective life, as contrasted to the objection domain of material events and objects that we can point to and measure" (p. 1). Most authors have agreed that there is simply no commonly accepted definition of spirituality but do attempt to differentiate spirituality from religion (Brown, 1987). This confusion (especially between the terms spirituality, religion and religiousness) led to the broader definition for spirituality used here.

For the purposes of this study, religion was defined as an institutionalized system of attitudes, beliefs and practices to which a person can be labeled as a member, an adherent or an endorser of the related set of tenets. Again, recent dictionaries viewed religion as an "institutionalized system of attitudes, beliefs and practices" (*Merriam-Webster's collegiate dictionary*, 2001, p. 985). In the usage in this study, the emphasis was from the individual's perspective and whether he or she claims that religion as his or her own. When a person is asked to identify his or her religion, the more common

responses have been a clearly recognized label of *Protestant, Catholic, Buddhist, Jewish,* and so forth. However, many Protestants might say a general term like *Christian* or even more specifically their particular denomination (e.g. Methodist, Lutheran, Baptist). Denominations are more specific subgroups within a religion (most typically subgroups of Protestants) or collections of local congregations with similar beliefs. Unless stated otherwise, references to a particular religion naturally included any subordinate or specific denomination.

In this study, a person's faith was viewed as synonymous with his or her religion, although general use of the term (e.g. "I am a person of faith" or "I have faith") would place this word in a much broader context (C. L. Anderson, 1995; Fowler, Keen, & Berryman, 1985). In this latter context, faith would appear to be closer to the broad concept of spirituality with a more general core belief in a supreme being or power rather than a particular religion. However, the confusion is obvious in a statement such as "I am of the Christian faith." Again, for use here, faith must be treated as synonymous with religion.

Religiosity was defined as the compound term that includes identification with a particular religion as well as the practice of its worship and tenets. This term religiosity was scalable meaning that there are degrees of religiosity. This was the overall term used in this study and was assumed to be synonymous with religious commitment as well as religiousness. Wheeler (1989) concisely defined religiosity as "one's motivation towards religion" (p. 8). Gunnoe (2002) added the element of practicing one's religion to the definition of religiosity. For the purposes of this study, religiosity would normally be defined and utilized as a compound dependent variable that includes three elements: (a)

identification with a particular religion, (b) adherence to its principles as well as (c) the practice of its worship and tenets. However, because the adherence portion was somewhat difficult to measure, the directly measurable aspects of religiosity included the identification and practice portions. Degrees of adherence was assumed to be correlated to the frequency of practice of religious worship and tenets. This allowed shortening the definition to what was stated above.

In the definition of the synonymous term religiousness is the idea of “faithful devotion to an acknowledged ultimate reality or deity” (*Merriam-Webster's collegiate dictionary*, 2001, p. 985). The emphasis provided by this definition is on the word *faithful* which implied ongoing practice. Therefore, religiosity was used in this study as far more than just claiming a religion’s name or a particular denomination as a personal label by saying “I am Jewish” or “I am a Lutheran.” In other words, religiosity was used here to indicate the degree of faithful practice of one’s religion – again, it encompassed both the identification and practice aspects. It included identification with a religion as well as practice of religious activities. These activities have included actions such as prayer or meditation and attendance at religious services.

This term religiosity has been used in the literature for decades. Compatible with the use in this present study, most references implied a meaning of more than just being a member of a religion or having some expression of faith (Gunnore & Moore, 2002; Ozorak, 1986; Worthington et al., 2003). These references also included the idea that is being presented here of being a practicing believer. Again, for clarification of the purposes of this study, religiosity included both identification and practice components. This study examined degrees and gradients of commitment; therefore, religiosity is

treated as a quasi-scalable variable. There will be those with less and those with more religiosity than others.

It is recognized that religiosity is a complex issue. Although this study does not attempt this level of specificity, Glock (1962) has suggested that the issue of religious commitment – comparable to the term religiosity as used here – really has five dimensions. These were: “(1) ideological (internalized beliefs), (2) intellectual (knowledge of the basic tenets of one’s religion), (3) ritualistic (the practices performed), (4) experiential (emotions related to a divinity), and (5) consequential or practical (the secular effects of beliefs, knowledge and activities)” (Pascarella & Terenzini, 1991, p. 280). In this study, student responses gathered through a cooperative survey instrument were utilized to measure change in religiosity. As it was not possible to add more questions to the instrument to achieve the specificity required to fully measure Glock’s dimensions, it is acknowledged that the term religiosity as used here was not as comprehensive and specific as Glock’s. The specific questions utilized for this measurement in this study have been detailed in the methodology section.

Further, religiosity was viewed as more than just spiritual feelings or some type of mysticism. Zern (1989) used three questions in an attempt to measure students’ current religiousness including the students’ own measure of their religiousness, their belief in a creative spiritual being and the degree of participation in formal rituals. The historic work of Pascarella and Terenzini (1991) found that nearly all studies of religious commitment eventually followed to some degree the distinction being made here. They stated the following:

Virtually all of the studies we identified (Campbell & Magill, 1968 is an exception) examined change in religious values or attitudes along one or both of two dimensions: (1) a generalized 'religiosity' and (2) religious activities (for example, church attendance, prayer, Sunday school attendance). Because of this strong tendency in the literature, our review is similarly structured. (p. 280)

In keeping with the operational definition detailed above of the term religiosity, this study followed the practice of prior studies by using religiosity to include both a religious identification or label as well as personal actions or activities of a religious nature. By doing so, this terminology allowed an expansion beyond the pertinent Railsback (1994) study, for example, because it was mainly limited to just one aspect of the label dimension. His primary focus was on the term born-again – a label with no relevance outside of the Christian religion. Because the dimension of born-again was intended to be one of the variables in the instrument used for this study, the definition of this term was included in an earlier section. It was defined as a Christian term describing an individual who has made a personal commitment to Jesus Christ as his or her personal savior. Regrettably, as explained in the methodology section of this study, utilization of born-again as an independent variable was not possible as it was eliminated from the questionnaire provided to the study population.

Literature Review Synopsis

As the following pages will show, there has been little in-depth study of the actual magnitude of impact of the affiliation or type of college attended on change in religiosity or religious commitment. Only a few studies have addressed the differences in the change of religiosity by the student's religion or denominational background. Although higher education literature has discussed overall changes in attitude and actions regarding religion and faith, there has been little measurement of the change process itself.

Railsback's dissertation (1994) was one of the first in-depth studies that attempted to measure this change – but only among Christian students and, more specifically, among born-again students. Further, Railsback was among the first to explore more completely the difference in religiosity and the correlation to the general type of college attended. However, this study was utilized on a population of students who graduated in 1989. Because much time has elapsed, this study, by its use of some of the same measurements, updated selected portions of the Railsback research. Although limited given that the born-again variable was not available, the discussion and conclusions of this current study provide some comments and comparisons.

More recently, a conference paper by Lee (2000) revisited this study area to some degree. The follow-up article by Lee (2002) presented the complete study and provided some deeper insights. As mentioned earlier, Lee's finding that religious convictions actually have increased, when nearly all previous studies have shown a decrease, was very important to the purpose of this study. This present study investigates this recent phenomena more completely than Lee's. Further, although she provided great insights on key student characteristics, Lee did not deal, to any great detail, with the impact of the specific college affiliation or type on changes in students' religiosity over their college years. Again, attempting to add an additional level of specificity to her study was included in one of the key research questions of this present study and was presented as one of the distinguishing areas of significance for this project.

The following review of literature was organized into appropriate categories to aid in the research questions. After a brief review of the major theories involved in the topic of overall maturation changes, the literature review then turns to the subject

categories most appropriate to this project: changes occurring during the college years; changes related to the college experience; changes related to religiosity (including changes in religion label as well as religious activities); and reasons for change in religiosity (including the impact of college affiliation). This section concludes with a discussion of measuring change in religiosity.

Major Theories – Overall Changes In Persons and Faith As They Age

It was beyond the scope of this project to provide a full discussion of all of the student development theories throughout the decades that may have some bearing on this topic. A number of articles and more recent dissertations have been published that give a broad view of those theories that are most applicable. The summaries prepared by Love (2002), Lee (2001), Anderson (2001), Lowery (2000) and Bolen (1994) as well as the original works have been utilized for the following discussion of applicable theories.

Many point to the work of Piaget in 1932 (who relied on even earlier work of Immanuel Kant) as the pioneer who first stated that moral development occurs in stages (Leftwich, 1984). More recently, the main theorists receiving the most reference included Chickering, Kohlberg, Fowler, and Parks. A brief review of each is presented here.

Chickering's *The Development of Autonomy* (1968) and *Education and Identity* (1969) are two of the most quoted texts in student development. Chickering identified seven major development tasks of adolescence and young adulthood that were labeled *vectors*. His more recent edition of *Education and Identity* (1993) included modifications to the original vectors to reflect changes in societal trends, research on students of color and revisions of the theory to incorporate adult students (Lowery, 2000). Chickering (1993) stated that the original purpose of the vectors was to articulate a developmental

philosophy for student development. Although the original purpose was to provide “major constellations of development during adolescence and early adulthood” (p. 44), they have been expanded to apply to adults as well. The vectors are now as follows:

1. developing competence – including intellectual, physical and manual skills, and interpersonal competence;
2. managing emotions – allowing emotions into awareness as signals of issues that need attention;
3. moving through autonomy toward interdependence – learning self-sufficiency, taking responsibility, and thinking independently;
4. developing mature interpersonal relationships – including tolerance and appreciation for differences as well as a capacity for intimacy;
5. establishing identity – including comfort with oneself, sense of context, sense of self in response to others who are valued and personal stability and integration, including reflecting on one’s family and defining self as part of a religious or cultural tradition;
6. developing purpose – being intentional, assessing interests, options and goals, to make plans, and then to persist in spite of obstacles; and
7. developing integrity – based on core values and beliefs that have been established within the person and personalized. (1993)

Clearly, the vectors of establishing identity, developing purpose and developing integrity all touch on the individual’s religious development. Chickering also acknowledged the substantial importance of a person’s close friends and peer groups who influence development. These peer relationships were seen to impact nearly every vector.

Kohlberg (1976) built on his own earlier work and developed a six-stage theory that described the development of moral judgment that occurs from pre-adolescence through adulthood. The stages are:

1. punishment and obedience – both this and the next stage progressively deal with the issues of egocentric fairness – how decisions will affect the individual;
2. instrumental relativism – pre-conventional level;
3. interpersonal concordance – conventional level;
4. law and order – moving from an internal to an external frame of reference;
5. social contract – the principled level; and
6. universal ethical principle – an autonomous position where moral values are defined that have application apart from the surrounding community (Shaver, 1985).

Shaver summarized Kohlberg by pointing out that an individual moves through these stages in a fixed progression. This unvarying sequence of development was seen as universal, but the rate of progression may be different depending on the individual and the learning setting. It was this movement and progression that is of interest in this study.

Fowler's *Stages of Faith* (1981) provided a more specific progression for faith development across the person's entire lifetime. The stages he identified are as follows:

Pre-Stage – undifferentiated faith – infancy

1. intuitive-protective faith – early childhood
2. mythic-literal faith – school years
3. synthetic-conventional faith – adolescence

4. individuative-reflective faith – young adulthood
5. conjunctive faith (mid-life and beyond)
6. universalizing faith.

The fourth stage, individuative-reflective, was associated with late adolescence and early adulthood and therefore is the most applicable to this present study. The synthesizing of multiple voices and involvements into a more coherent faith is the hallmark of the synthetic-conventional stage. The actual movement from this stage toward individuative-reflective has been identified as the time of the college experience. It is in the later stage, individuative-reflective, where the person “takes seriously the burden of responsibility for his or her own commitments, lifestyle, beliefs and attitudes” (p. 182). Achieving the full measure of faith maturity defined by the individuative-reflective stage may not happen until much later than the college years.

Parks expanded Fowler’s stages by adding more specificity for young adults. Her concern was that most of the stage-related theories jump too directly and easily from adolescence to adulthood and noted that there is often “‘noise’ or anomalies between these two stages” (as cited in P. G. Love, 2002, p. 9) that need to be addressed. With that addition, Park’s model of development became the following: “adolescent or conventional, young adult, tested adult and mature adult” (p. 10). The stage of young adult was further delineated on three interacting components: forms of knowing, forms of dependence and forms of community. Within forms of knowing, Parks noted that while adolescent faith was grounded in authority outside the individual, young adult was marked by probing commitment. Forms of dependence moved to a fragile inner-dependence. The forms of community needed by the young adult involve mentoring.

Love's summary of this stage was rather insightful. He pointed out that young adults can temporarily regress to the authority bound stage of adolescence until they feel more comfortable in the college environment. They were apt to switch from parental authority to that of their professors. The college years were shown as a time when probing commitments are made that will be the foundation of the next stage: tested adult. In summary, Parks noted that changes and continual testing are to be expected in this stage (as cited in Hartley, 2003).

Building on these foundational theories, it is clear that the college years are a time of questioning, searching and movement. It is a time of transition from other control to self-control where decisions of faith and religion move from being imposed by parents traditionally to a faith that becomes inherent in the individual.

Changes Occurring During the College Years

Love (2002) stated that "the dominant focus in cognitive development theories concerning college students has been on meaning-making and the development of its structures" (p. 370). Finding one's life-pursuit or purpose, making sense of the learning environment, building life-long relationships as well as discovering the internal essence of the individual are all gargantuan tasks undertaken during the college years. Not only are these major tasks, but many students struggle in the process.

Lee (2001) identified these as impressionable years when attitudes are also susceptible to change. Willimon (1997) stated that there is an openness during this time to explore and experience religion. Dalton (2001) placed this time into an even more descriptive perspective. He wrote that "the spiritual quest is a lifelong pursuit, but it emerges full bloom during the transition from youth to adulthood" (p. 17). With such a

time of exploring and testing underway, Dalton pointed out the simple truth that young adults have a heightened sensitivity about many of the transitions that are underway – including their overall spirituality, faith or religious perspective. He summarized much of what has been gathered from the previously identified foundational student development theorists. He stated:

Spirituality is especially important in the learning and experience of college students because late adolescence is a time of heightened sensitivity about personal identity, relationships, ideology and decisions about the future. It is a time of great potentiality and vulnerability in development, when concerns about individual purpose, meaning and commitment interact with the forces of cognitive development, maturation, and social expectations. (p. 18)

Love (2002) cited Parks and Fowler and pointed out that this time is a critical time of searching for meaning in nearly all aspects of life. It is generally understood that the “big” life questions are being asked during this time such as “why am I here?” and “where do I belong?” How one ultimately makes sense of the world and answers these ultimate questions usually begins with answers from authority figures. As these answers come under the stress of youthful discussions and questioning, the more innocent views of the world must be modified. The authorities are seemingly proven wrong, their answers sometimes appear unreliable and possibly in conflict with those of the peer group and what the student perceives in life. Love viewed this time as a potential catalyst for the loss of faith. However, he saw this loss as healthy in that it is a loss of a more naive faith that can now be moved forward in development towards a more mature faith.

Ultimately, the college years have been shown to be a time of transition toward maturity and personal identity. Marcia (Hunsberger, Pratt, & Pancer, 2001) has shown that the struggle for identity achievement is marked by what are called *identity statuses*: *achieved* (committed after exploring due to crisis), *moratorium* (exploring without

commitment), *foreclosed* (committed without exploring), and *diffused* (not committed and no exploration). College students can be placed among these statuses as they transition to more mature adults. This underscores the point that even values such as religious commitment potentially undergo transitions in strength during this time of maturing.

Changes Related to the College Experience

The lifelong work of Alexander Astin has included on-going evaluation of what happens to students during the college years. He not only has chronicled what they participate in but also their changing views on a variety of topics. His publications and that of the Higher Education Research Institute (HERI) are based in quantitative research and are used extensively as the definitive word on students and the college experience. His text, *What Matters In College: Four Critical Years* (1993), was an in-depth commentary on what we know about students. The data collected by HERI was the data set for this study.

Astin (1991, 1998) foresaw and confirmed a remarkable shift of overall student priorities. He found that in the late 1960s “developing a meaningful philosophy of life” was the top value, endorsed as an “essential” or “very important” goal by more than 80% of the entering freshmen with “being very well off financially” further down the priority list. As Astin reported in 1998, these two values had basically traded places, with “being very well-off financially” now the top value (at 74.1% endorsement) and “developing a meaningful philosophy of life” now occupying sixth place at only 42.1% endorsement. This represented a remarkable change of priority for students. Astin was even more emphatic as he labeled this shift a “precipitous decline.” It appeared that acquiring the

ability to earn a living has become a more dominate objective than those priorities that could be viewed as closely related with building character and one's individual philosophy. This change could seriously impact religious commitment as these values become less important than in previous years.

Two other valuable resources must be mentioned in this same regard. Pascarella and Terenzini (1991) contributed greatly to the study of student development by compiling over 20 years of research studies into one volume in *How College Affects Students*. The second reference identified as needing specific mention was *The Impact of College On Students* (Feldman & Newcomb, 1969, 1994). Many of the items discussed below are in reality quoted from Feldman and Newcomb by Pascarella and Terenzini. In summary, based ultimately on the work of both of these teams, the following points can be made on what the research says about the college experience's impact on students [although some of the following are direct quotes and some are paraphrases, page references are provided to *How College Affects Students* (1991)]:

Influence on Identity and Values:

1. During their time at college, students experienced a significant "search for identity" as to the adults they will become (p. 183).
2. The college years were a particularly intense period of change in values and attitudes that does not occur to the same degree following the college experience (pp. 323-325).
3. Consistent evidence points to the fact that a young person's value structure significantly changed during the college experience, with one exception – those at denominationally affiliated schools (pp. 326-327).

Influence on Religiosity:

4. With some exceptions, ... the literature published since 1967 fairly consistently reports statistically significant declines in religious attitudes, values, and behaviors during the college years..." (pp. 280-281). For example:
 - a. a study of seniors at the University of Texas reported a drop of 27% in self-reported religious activities (church attendance, prayer, etc.) (p. 281);
and
 - b. Astin found declines of 31 to 35 percent in church and Sunday attendance over the four years of college (p. 281).
5. Studies also clearly indicated that a change in students' religious commitment mirrors the change in their religious affiliation and behavior (pp. 280-281).
6. Colleges influenced changes in a student's religious orientation and behaviors (p. 293).
7. Studies (Astin 1972 & 1977) found significantly greater than expected decreases in conventional religious affiliation and religious behaviors (praying, reading the Bible, etc.) among students attending selective, prestigious, non-religious affiliated, 4-year colleges and large public universities.

In fact, as attending secular and public universities produced declines in students' religious values and behaviors, enrollment in church-related colleges tended to support and strengthen the students' existing religious values and behaviors (p. 303).

8. Institutional characteristics clearly played a role in the degree to which religious preferences, values, attitudes, and behaviors changed during the college experience – with secular institutions exerting the strongest most consistent negative influences (pp. 303-304).
9. Further research indicated that changes in religious values which occur during the college years *do indeed* persist into the adult years (p. 329).

Influence of Faculty:

10. “[R]esearch made clear the important influence faculty members have on student change in virtually all areas” (p. 655).
11. Evidence indicated a link between the religious values, behaviors, and preferences of faculty and the tendency among students to change their religious commitments (p. 315).
12. Where the faculty was non-religious or mildly religious, students’ religious commitments move considerably toward the secular. Where the faculty expressed greater commitment to religious values and behaviors, the institutional environment supported the students’ religious values and commitment during their college experience (p. 315).
13. The values of faculty have been shown to have a direct influence on the change in values among students (p. 328).

Of most concern to educators and philosophers is that the college experience gives students as well as faculty and staff a unique opportunity to question nearly everything including the “deeper questions of authenticity and identity, of meaning and purpose, or spirit and spirituality” (Chickering, Astin, & Higher Education Research

Institute, 2003, p. 1). Further, seeing the impact of the college experience as listed above, many educators who are supporting the *Initiative for Authenticity and Spirituality in Higher Education* (Chickering et al., 2003) have agreed that the education environment and those who touch students should be prepared to provide a balanced perspective and a supportive environment for spiritual exploration and development in this time of transition. It seems clear from the concerns expressed in the above initiative and overall comments from recent major works such as Tisdell's *Exploring Spirituality and Culture In Adult and Higher Education* (2003) that there has been a critical lack of preparation of higher education to meet this task. A recent presentation to student development professionals showed quite candidly that the inner lives of students which would include religious and spiritual values "have often been ignored in educational contexts" (Johnson et al., 2003, p. 5).

Changes Related to Religiosity

To underscore them here, a few points need to be repeated from Pascarella and Terenzini's (1991) comprehensive review of the literature. First, the research to this point (other than Lee's recent report) has shown a consistent decline in religious values, attitudes and behaviors over the college years. Second, colleges have been shown to influence the change in student religious orientation and commitment with secular institutions exerting the strongest, most consistent negative influences as measured in reduction of religiosity. However, church-related colleges have shown a positive impact on religiosity measures. Third, faculty have a substantial impact on their students' change processes because students tend to emulate the values and behaviors of their faculty. Finally, it is clear that the religious values changed, gained or solidified during these

transition years are the values that persist in the adult years. Although the reasons for these changes are explored more fully in a subsequent section, other research validates and builds on what Pascarella and Terenzini reported in 1991.

Glock was one of the first to view the importance of religion in a person's life as a fitting reason to study religiosity (1962). Later, Funk (1987) summarized much of the research from Glock and others with the following comment:

Previous research has reported that college students become less favorable toward the church, less convinced of the reality of God, and less favorable toward the observance of the Sabbath. They also have less conservative, orthodox, and fundamental beliefs and are more liberal in their religion (Feldman and Newcomb, 1969). Trent and Medsker (1968) noted that college graduates have higher scores on religious liberalism than do persons who had been employed during the same period. Levine (1980) found that religious commitment drops during the college years and, on entering college, students begin to exhibit signs that point to a greater secularization of religious beliefs and a questioning of traditional values. (p. 224)

Lee reported that from her review of literature nearly all research showed a decline in religiousness over the college experience (2000, 2001). However, her most recent research shows a totally opposite trend. Using a primary measure of self-rated change in religious beliefs and convictions, she found a surprising report of increase rather than the expected decrease. She stated:

Contrary to the hypothesis, over one third of them [students] reported a strengthening of religious convictions and beliefs compared to 13.7% who indicated a weakening.... The data suggest that the widely publicized "secularizing" effect of college on students is over-generalized. (2002, p. 376)

One of the areas of interest in this study is the possible confusion of religion and spirituality in the results found by Lee. Apparently, today's students have become more prone to say that they are spiritual but not religious (Johnson et al., 2003; Tisdell, 2003). Expanding Lee's findings and determining their applicability across the students'

denominations and the affiliations of the colleges attended were a primary focus of this study. Clearly, her work was critical to explore, for it reflects what appears to be a renewing of the importance of spirituality (and by implication religiosity) on campus.

Additionally, Railsback's 1994 study of "born-again" Christian students was very foundational to this present study as it provided some important findings related to the impact of college type and affiliation on student religiosity. He found that the vast majority of Christian students attend non-Christian colleges. As previously mentioned, of the group that attended public universities, approximately 52% either no longer called themselves "born again" or had not attended any religious services or meetings in over a year by the end of their college experience. Public universities had fewer students who maintained born-again status; the highest defection rate from born-again status; the least percentage of students who reported their religious beliefs and convictions as stronger; the largest percentage of students who maintained born-again status but spent no time attending religious services; and the smallest percentage who spent three or more hours at church. However, Railsback was only able to measure the change of religiosity by general categories of colleges: Coalition (members of the Coalition for Christian College and Universities, more recently renamed to the Council for Christian Colleges and Universities or CCCU), public university, private university, public four-year, non-sectarian four-year, Catholic, Protestant and Black. This present study was intended to update many of Railsback's measures and expand the level of specificity by adding the denominational affiliation of the college as well as that of the student. As will be explained in the methodology section, the comparisons related to the born-again variable were not possible.

Caplovitz and Sherrow investigated what was called religious apostasy among a number of faiths (1977). They found that the apostasy rate among Catholics was about the same for Protestants and Jewish faiths. As the study presented here identified the incoming religion of the student as well as that stated at the end of the college experience, if applicable, those who dropped from their faith or changed to another were also identified. As stated previously, this study endeavored to add specificity to the denomination level that was not accomplished in earlier studies.

Reasons For Change in Religiosity

A search of the literature on the change in religiosity yielded a number of explanations for this change. Although this study measured the degree of change among students, it only briefly comments on perceived reasons for change. The previously mentioned *Spirituality in Higher Education* (Higher Education Research Institute, 2003b) study will shed new light on this topic. However, an overview of the major reasons presented to date in the literature will be of use in determining the need for further study. The major reasons for a change in religiosity as presented in the literature include confusion of the terms religiosity and spirituality; personal characteristics; preparation for college; maturing and questioning process; affiliation-type of college attended; college environment; lack of support on-campus; relationships with influencers; actions taken or not taken; and denominational affiliation. The following discussion reviews each in turn.

Confusion of the Terms Religiosity and Spirituality

As discussed in the introductory comments, there is much confusion of the terms religion, faith, religiousness, religiosity and spirituality. A student reporting increased religious commitment may be confusing it with a greater spiritual awareness. A limitation

of this study's instrument was also an unstated but potential limitation in the recent contradictory findings of Lee (2002). Studies, such as this current one, that utilize the CSS must acknowledge that although spirituality has both direct pre and post measures within that instrument, religiosity does not have a similar pre and post measure. Lee's report of increased religious convictions of students using solely a post measure may be more of a reflection of a generalized increase in spiritual awareness. Future studies must be sensitive to this blurring of definitions, especially with the increase in spiritual awareness after the September 11, 2001, Trade Center disaster. More clarification of student meaning is expected from the announced Spirituality in Higher Education Study discussed earlier (Higher Education Research Institute, 2003b). When completed, this study will allow much deeper discussion and clarification of the connection between religion and spirituality than has been possible before. As recently reported, the "nomadic wanderings" and "choosing among diverse options" that are reported in college do contribute to the confusion of terminology related to spirituality and religiousness (Hartley, 2003, p. 2).

Personal Characteristics

In some studies, it appeared that there may be some correlation between degree of religious commitment and personal characteristics (Lee, 2000). Although it was clear that these individual characteristics alone do not directly predict the degree of change, some were noted in the literature, more specifically gender and cognitive ability. Lee noted that these "are often mediated by other values" (p. 17) but are worth a brief discussion.

With regard to gender, a recent study of religious predictors in youth stated, “Most studies find that females are more religious than males (Bensen, Donahue and Erickson 1989; Wilson and Sherkat 1994), although some of the more comprehensive studies of adolescents report few gender differences (e.g., Ozorak 1989)” (Gunnoe & Moore, 2002, p. 615). Depending on the mix of students in the sample set including the proportion of subjects by gender, any study that reported measures of religiosity could have under- or over-stated the real case. The mix of students must have been representative of the population in order to avoid misrepresentation of any overall measure of religiosity. It was assumed for the purposes of this study that although there may be a difference in religiosity by gender that the degree of change in religiosity by gender will be similar and proportionate.

Another characteristic correlated to the degree of change in religiosity is cognitive ability. Lee reported that “students who have higher high school GPAs tend to report a weakening of religious beliefs. In other words, high academic achievers are predisposed towards a weakening of religious faith prior to college entry” (2000, p. 18). Gunnoe (2002) discussed this even more specifically. She found the following:

Cognitive ability is a consistent predictor of religiosity, but the direction of this association varies by age. High cognitive ability predicts high religious involvement in high school, followed in young adulthood by a time of questioning that often prompts changes in religious affiliation and/or apostasy (Ozorak 1989; Sherkat 1998). However, many apostates return to church later in life (Wilson and Sherkat 1994) and adult church attendance is positively correlated with educational attainment within most major American religions (Albrecht and Heaton 1984; Greeley and Rossi 1966; Himmelfarb 1979). (p. 614)

For the purposes of this study, the discussion of degrees of change related to cognitive ability and grades in high school seemed to create more questions than answers.

Perhaps it was simply that those who are more analytical had a tendency to question more and therefore had more opportunity for change. Or perhaps being in contact and conversations with peers, and in some cases perhaps even teachers, who question the importance of religion influenced the degree of change. (The importance of other influencers will be dealt with in a later section.) Nevertheless, one should not jump to the conclusion that academically superior students in more academically challenging environments will automatically exhibit greater apostasy. Railsback (1994) reported that Bible colleges had a very academically challenging environment. He stated that Bible colleges appear to be “above average for other types of colleges in terms of their scholastic orientation – everything from experiences with the faculty and in the classroom to the attitude of the students themselves” (p. 20). In this environment, even the best students appeared to have some strengthening occur in their life-long religious commitments. Not only did nearly 80% of these students get involved in church related ministries while in college (Accrediting Association of Bible Colleges, 2003), but over 90% of Bible college graduates reported involvement in full or part-time ministry after college (Bosma & O’Rear, 1980). What remains clear, however, is that most students with greater faculties to question and think through the important issues of life take the opportunity during the college years to do so.

Preparation for College

With educational options from private religious pre-schools to high schools, home schooling, as well as to other private and public pre-college institutions, there has been some interest in the impact of the type of schools attended prior to college and their influence on religious commitment. In general, the literature showed that a student with

substantial religious training during the high school years will have a greater long-term commitment to his or her family's religion. According to Gunnoe (2002), "religious schooling fosters religiosity by reinforcing parents' socialization efforts and by channeling adolescents into religious peer groups (Greeley and Rossi 1966; Himmelfarb 1979)" (p. 614). As will be discussed, among the more important factors in changing or maintaining religious commitment is the student's peer group. Gunnoe's study showed that developing this peer group through religious training or school situation, even during the high school years, reinforced the parent's view of the importance of religion in the life of the student. Normally, those students in the same environment became friends that influenced each other toward religious commitment.

However, the amount of religious training needed to positively impact religious commitment in the long-term was quite extraordinary. A study by Benson, Donahue, and Erikson in 1989 concluded that religious schooling could have a long-term effect on religiosity "if it involves at least 1,000 hours of classroom instruction in religion, and that religious education during high school is more effective than religious education during the primary years" (Gunnoe & Moore, 2002, p. 614). Assuming a four-year high school career with approximately 200 days of instruction per year, 1,000 hours of classroom instruction equates to 75 minutes every day of high school.

Focused religious training prior to high school has been shown to be positively correlated with long-term religious commitment. Religious training and schooling during childhood was found to be a predictor of young adult religiosity, providing evidence for the importance of explicit religious training during the formative years (Gunnoe & Moore, 2002). However, there was a downside to concentrated religious training in

childhood if the training was not reinforced during the high school years. It has been shown to be possible that religious activities of all types are viewed clearly as only relevant for the young. College students may equate religious training and commitment as a reminder of other simple, childish endeavors (Elkind, 1999). If viewed in such a limiting light, religion and religious commitment have not been seen as necessary in the heady, young adult years of college.

Maturing and Questioning Process

As was shown in the discussion of major theorists, the college years are a time of major questions, discussions and exploration (Dalton, 2001; Lee, 2001; Willimon, 1997). Parks stated, “This is the time of big questions and of trying to develop worthy dreams” (Tisdell, 2003, p. 100). The process of questioning one’s religious, cultural, or spiritual being can take different forms. In general, although serious questions may be asked during this time, it does not always lead to a break with one’s religious tradition. Tisdell stated,

They [young adults] may engage in serious questions or have serious disagreements with their religious tradition in young adulthood and throughout their lives but may remain committed to the religious community in which they grew up, though they may not be in agreement with all aspects of its doctrine. (p. 101)

The college years are a time of questioning. Chickering (2003) stated: “Higher education offers a unique opportunity for students, faculty and staff to pursue deeper questions of authenticity and identity, of meaning and purpose, or spirit and spirituality” (p. 1). With these questions in the minds of students and the opportunity to discuss these issues with peers and faculty, the college years have become a time of transition from the values and beliefs that may have been imposed to those embraced. As students mature

and begin to take responsibility for their own beliefs as shown by Lee (2001), they have been shown to begin differentiating between a more institutional or family religion to a faith system of their own (Elkind, 1999). This time of questioning and maturing becomes an opportunity to sort out these questions and issues and eventually embrace an autonomous faith system. In doing so, there may be changes in students' commitment to their incoming religion in both its label as well as its practice.

Affiliation-Type of College Attended

One of the areas that was of great importance for this study was the impact of college affiliation and type on student religiosity. There have been some studies that have explored this area, however, not to the level of specificity desired here. Early studies viewed the impact of college affiliation or type on student religiosity as relatively small (Braskamp & American Educational Research Association, 1968). In fact, studies that discussed differences from 1946 to 1966 concentrated on the differences in students attracted to college and not much on the differences in the colleges themselves (Gold & Los Angeles City College, 1967). Chickering's paper for the American College Health Association was one of the first to discuss some evolving differences in student development in a number of areas influenced by differences in college religious emphasis (1966). Prior to the 1960s, one would have been hard pressed to point out many differences between public universities and colleges and their private and sectarian counterparts. Marsden's (1994) epic work, *The Soul of the American University*, traces the roots of most major universities back to a religious or faith-based founding. Up to the 1960s, the culture of colleges remained parallel with many religious expressions and traditions evident even in public institutions. It is somewhat easy to understand why

earlier studies did not find much difference. However, Marsden also showed that many colleges that were originally religious based are anything but that now. This increasing secularization of many of our institutions has led to a relegation of religion to a substantially limited role. Cherry, DeBerg, and Porterfield (2001) found that today's more secular colleges have not abolished religion but have reduced its role "by stripping it of significant influence, confining it to the innocuous realms of voluntary campus groups and religion classrooms where religious convictions are suppressed" (p. 3). As a consequence, "the presence of religion programs in universities is, on balance, not a countervailing force to the secularization of universities" (p. 3).

In today's student development literature, there is an expectation of differences in the college's impact on the religiosity of the student depending on the type and affiliation of the college attended. Johnson (Johnson et al., 2003) and the study team from the Higher Education Research Institute have proposed the variable of college type and affiliation in their study. As has been discussed earlier, higher education has been tied to a weakening of religious convictions. Somewhat more specifically, a few studies have shown that there are clear differences by the general type of college attended on student religiosity (Lee, 2000; Railsback, 1994). Studies of changes of similar students who attend different institutions clearly have shown differences in major student attitudes and values including religious commitment. Chickering (1971) stated,

Apparently a college's characteristics do make a difference to student development. Similar students who enter different colleges change differently. Even though mean changes are similar for diverse students and diverse institutions, the choice of a college and the subsequent experiences may have significant consequences for an individual student. (p. 14)

Although some studies have concentrated on public versus private in general (K. L. Anderson, 1984), there is a new interest in differentiating colleges by the inherent belief systems of the school. Hadaway and Roof found that inherent college belief systems that counter religion lead to a weakening of student religious commitment (Lee, 2002). Although the study was of high school students, Dudley found a significant difference in the faith-maturity scale of those who attended a Christian school versus a public institution (1994). Again, expanding research of the change in religiosity to the denomination level whenever possible of both the college and the student was one of the underlying purposes of this study.

College Environment

The college environment itself has been shown in the literature as one of the potential causes of change in students and more specifically for this study, in their religiosity. It is a place where multiple voices and opinions can be heard. One need only walk through the student center of nearly any major campus to see messages and presentations from Baptists to Buddhists. Many authors have named this current climate as “religious pluralism.” Lee (2000, 2001) found ample evidence to conclude that the college environment of pluralism and diversity was often tied to changes in religious commitment. Cherry (2001) also noted the many religious voices, all vying for attention, that confront the typical college student on today’s campus with multiple religious opportunities for students.

In this environment, Lee noted that more lightly held beliefs are challenged with an exposure to diverse opinions leading to a potential weakening of religious convictions (2000). In the midst of finding one’s way, students who are searching and questioning

their religious traditions can find ample avenues of exploration. It is clear that young people in this time are engaged in finding their way within this landscape of multiple religious voices. No doubt was expressed when Hartley summarized this developmental period as one of potentially more engagement in the exploration process than at any other time in higher education history (2003). Confrontation with the possibility of changes in student religiosity in this environment seems almost to be inevitable.

Lack of Support On-campus

While other religious voices are vying for attention, one's own faith may not be part of the actual religious "noise." It seems to follow logically that the failure on campus to engage students in a defense of their own faith may lead to other faiths receiving attention and eventually commitment from the student. Gorsuch (1994) provided a complete discussion of the psychological basis of religious commitment. Within that discussion he defined intrinsic and extrinsic commitment. In short, intrinsic commitment deals with a religious practice that is done for its own sake – the faith is an end in itself, not just because it feels good but because it is deemed as the right thing. Extrinsic religious commitment includes some other outside motivation such as going to church to meet friends or to be seen. There are mixtures of these commitments, such as indirectly extrinsic, where the person practices the faith because of habit. Gorsuch pointed out that such habits can continue until there is a major challenge or interruption. Students who arrive at college who have been practicing a faith simply out of habit are particularly vulnerable to change. As Love (1999) stated, "During a period of time when students struggle to make meaning in and of their lives, they will seek support and stability" (p.

363). If that support is not available or is not found, students can be susceptible to changes in commitment to their religious tradition.

Relationships with Influencers

As shown in the literature, parental and peer influence are two important predictors of student religiosity. Faculty also had a substantial influence on religiosity. Ozorak (1987) confirmed that parents exert primary influence on the adolescent's beliefs and religious commitments prior to college, especially when the family is close and the parents hold strong religious commitments. Peer support was important in these pre-college years, but parents are more influential in determining religious orientation. Ozorak also noted that in this stage, parents were "perceived as caring more about religious participation than peers did, and most adolescents were strongly motivated to avoid friction with parents over religion, even if their own beliefs had changed" (p. 8). Adolescents, even if they started the questioning and searching processes, went along with parents to avoid conflict until they were no longer under parental influence. In another study, Ozorak (1986) also found that overall, family religiousness was the best predictor of religious beliefs, practices, and experiences, and of self-rated religiousness for all age groups. Further, staying at home decreases changes in the student's religiosity (Lee, 2000). Apparently, staying at home versus on campus with peers continued the parent's stronger influence on the student's religious behavior and commitment.

Gunnoe's (2002) findings also supported this concept of the strength of parental influence on religiosity. However, she found that this major influence quickly moves from parents to peers once adolescents move out of the parent's home. She labeled this an "inversion in the relative influence" (p. 621) due to the switch in importance from

parental to peer influence. One study reported that adolescents did not seek to break ties with parents or adults so much as to revise their relationships in a more adult direction (Lovinger, Miller, & Lovinger, 1999). In this process, parental and peer influence appear to switch places in terms of major influence with parental authority being superceded by peer influence.

Adolescents are social creatures and as the opportunity of college provides avenues and opportunities to develop more social connections, students will willingly move to influence exerted by the social group. Stark stated,

In social groups wherein a religious sanctioning system is the mode and expressed in daily life, the propensity to deviate from the norms will be influenced substantially by the degree of one's commitment to the religious sanctioning system. However, where the religious sanctioning system is not pervasive, the effects of the individual's religious commitment will be muffled and curtailed. In such a setting, religion will not find everyday expression, but will tend to be a highly compartmentalized part of the lives of its adherents. (Serow, 1989, p. 109)

The more the student becomes committed to the peer group, the more the norm of that group to enforce or criticize the student's religious commitment will influence the student's behavior. Astin (1993) agreed that the students' peer group is "the single most potent source of influence on growth and development during the undergraduate years" (p. 398). He became even more specific by stating,

Perhaps the most compelling generalization from the myriad findings summarized in this chapter is the pervasive effect of the peer group on the individual student's development. Every aspect of the student's development – cognitive and affective, psychological and behavioral – is affected in some way by peer group characteristics, and usually by several peer characteristics. Generally, students tend to change their values, behavior, and academic plans in the direction of the dominant orientation of their peer group. (p. 363)

Dalton (1989) made almost the same point by stating, "There is a good deal of evidence to suggest that the values college students develop are strongly influenced by the extent

and intensity of their involvement with the college peer culture and the values prized in that culture” (p. 181). Lee (2000) reported that in some cases, the student continued under what appeared to be parental influence even in college because he or she was attending college with members of the same high school peer group. In this case only, the peer and parental influence appeared to be more closely connected and supportive of each other. Under nearly all other scenarios, the student had a tendency to emulate the values associated with the college peer group, even if different from the values of the parents.

The values of the faculty also have tremendous influence on the religious commitment of the student. As noted in Pascarella and Terenzini’s (1991) summary of years of research, faculty were shown to have substantial influence on the student values. As discussed earlier in the overall summary of their work, there is a link between faculty values, behaviors and preferences and the tendency of students to change their religious commitments. It appears that students are prone to reflect the values of their faculty. They also found that where faculty have strong religious commitments, students emulated these religious values and vice versa.

Ultimately, this section has shown the tremendous pre-college influence of parents on student religious commitment. During college, commitment clearly is influenced by the degree of commitment and religious values of the peer group. Faculty have also been shown to be strong influencers on the values and religious commitment of college students. Chickering (1971) found that although students were apparently influenced by institutional differences in general atmosphere and student characteristics as well as in educational practices, the difference in student-faculty relationships, and in the nature of relationships among friends and acquaintances are extremely important. For

these reasons, the choice of a college and the subsequent experiences with peers and faculty may have important consequences and impact on the student's entering college-level religious commitment.

Actions Taken or Not Taken

One of the most correlated measures of religious commitment has been shown to be attendance at religious services. Another section will be more specific in discussing measures used in previous studies. Nearly all reports of research in this area have included attendance as one of the measures. Lee (2002) stated that attending religious services "predicts changes in religious convictions" (p. 379), more so than other measures. Railsback (1994) also found that attending religious services was a good predictor of religious commitment. In fact, Lee (2000) found that attending religious services was by itself a good predictor of religious commitment.

Attending services prior to college has been shown to be important in measuring religious commitment in college. This makes sense in that if attending religious services was correlated to strong religious commitment, it seemed to follow that the same activity would be correlated to pre-college religious commitment. It is no wonder that students who stop attending religious services in college who had attended prior to college would have this same variable correlated to a decline in religious commitment.

One of the difficulties in using attendance at religious services as a predictor is the confusion of on-campus services with those at churches or synagogues in the community. Many private colleges require attendance of all students at college chapels. A positive answer to questions about attending religious services may indeed include these chapels, even if a student does not attend elsewhere. Lee (2000) reported that it was unclear

whether answers included attendance at on-campus services. What was clear though was that attendance at religious services was highly correlated to a strengthening of religious convictions. Attendance of religious services of any kind, on or off-campus, was an important variable in this study.

Denominational Affiliation

Finding out if there existed a difference by religion and denomination in the degree of religious commitment and the change in religious commitment over the college years were major questions of this study. Although there have been some studies that have touched on this area, most have used either general groupings of faiths (Protestant, Catholic, Jewish, Eastern) or have been too limited in sample size to address more specifically any differences by denomination. Lee (2000, 2002) and Railsback (1994) were limited in their denominational categories and specificity. Pouryoussefi (1984) only studied changes in religious commitment of Muslim students studying in the United States. Reports from the Higher Education Research Institute to this point have only used general categories of student religions. Other studies have reported some confusion of religious identity with religious commitment where statements of belonging to a particular faith may not necessarily correlate with degrees of commitment (Hunsberger et al., 2001). Again, the methodology of this study added more specificity to the discussion of denominational impact by using nation-wide data from a larger number of identifiable denominations.

Some studies have reported similar change patterns in religious commitment over time across major religions. Roof (1977) reported that there was a similar change pattern for Catholics and Protestants overall but that there are differences within Protestant by

denominational groups. As Protestants vary tremendously in degrees of conservatism, Roof's use of an overall mean change in religious commitment most likely averaged out the wider variations of specific changes within particular denominations.

Other researchers have more specifically predicted differing degrees of change in commitment depending on the strictness of the denomination. Olson's (2001) study was useful in thinking through the implications of denomination and religious commitment. He postulated that more strict denominations should lose less membership over time. However, he found that the greater the degree of strictness, the greater the commitment. His assessment was based primarily on the higher "costs" of membership. Stricter lifestyle, attendance, and financial support requirements had a tendency to weed out the less committed at the point of membership. Those who remained in a more demanding faith are clearly more committed to that faith. In summary, Olson found that the highest level of religious commitment was found in the more strict denominations. His work has been useful in thinking about denominational differences in the degree of change in religious commitment.

Others have reported this same finding. Although there are differences in the change in religiosity, Gunnoe (2002) found that more conservative denominations lose less membership than more liberal ones. Roof (1979) reported similar results. Pang (1961) found that students reflected the standard denominational attitudes, as do adults, implying that this same degree of change in religiosity by degree of strictness should apply to students also. However, the literature reviewed thus far in identifying the college years as times of great questioning and working out an individual's personal religious commitment would seemingly imply the opposite. One could assume from the

psychological change literature that students would actively reject more strict religious beliefs and actions given the opportunity of the college situation. Less accountability to parents and greater involvement with potentially less conservative peers and faculty would seemingly open up tremendous options for exploration. Exploring the differing degrees of change by religion and denomination is an important contribution this present study makes to the literature in this area. Incorporating non-Christian students in the sample will help overcome the limitations of previous studies that only focused on Christian students and or other monotheistic religions. This incorporation will counter a major limitation in previous studies pointed out by both Hartley (2003) and Lee (2002).

Measuring Change in Religiosity

A review of the methodologies of previous studies and their implications for this study is of benefit. Many surveys conducted in the last 50 years or earlier have included a question about religion among other identifiers such as age, birthday, occupation, and so forth. In 1956, the National Opinion Research Center (NORC) of the University of Chicago was the first to ask a second religion question. The respondent was asked not only the religion in which he or she was raised but also the respondent's current religion (Caplovitz & Sherrow, 1977). Caplovitz viewed this as a momentous step in the study of religion. He stated,

In devising both questions, the NORC research team gave formal recognition to the dynamic nature of religious affiliation, thereby converting what most researchers had perceived as an ascribed, unchanging characteristic to one that has elements of achievement as well. As a result of these two questions, it became possible for the first time to identify converts and apostates, that is, those who had left their religion of origin for some other religion or for no religion. (p. 16)

Measurement of pre-post religious identification began with this rather simple addition.

Since that time, other instruments with much greater sophistication have been developed.

Wheeler (1989) reported use of Allport and Ross' Religious Orientation Scale (ROS) and Paloutzian and Ellison's Spiritual Well-Being Scale (SWB). The ROS contains two separate scales, Intrinsic and Extrinsic. The SWB has a scale for overall Spiritual Well-Being (SWB), as well as subscales for Religious Well-Being (RWB) and Existential Well-Being (EWB). Wheeler reported that at the time of his writing, over 70 published studies had used the ROS, “making it one of the most frequently used measures of religiosity” (p. 23).

Most recently, Worthington proposed a new scale, the Religious Commitment Inventory or RCI-10 (Worthington et al., 2003). It proposes measurement of 10 factors including the following:

1. My religious beliefs lie behind my whole approach to life.
2. I spend time trying to grow in understanding of my faith.
3. It is important to me to spend periods of time in private religious thought and reflection.
4. Religious beliefs influence all my dealings in life.
5. Religion is especially important to me because it answers many questions about the meaning of life.
6. I often read books and magazines about my faith.
7. I enjoy working in the activities of my religious organization
8. I enjoy spending time with others of my religious affiliation.
9. I keep well informed about my local religious group and have some influence in its decisions.
10. I make financial contributions to my religious organization. (p. 87)

More specific measures such as these are also the thrust of the recently announced national study of student spirituality (Johnson et al., 2003). Similarly, the questions asked in that study will be far more comprehensive than any study to date.

Other studies of religiosity have been rather consistent in what has been used to measure change in this variable. Gunnoe (2002) used three main items: “importance of religion to the participant; frequency of attendance at religious services and activities;

frequency of prayer” (p. 616). Mockabee (2001) reported on the use of a more complex measure of religiosity that was similar to the "religiosity index" constructed by Guth and Green in 1993. It tapped three of the elements of commitment identified by religion and politics scholars Kellstedt and Legee in their 1993 and 1996 studies: ritualistic behavior (attendance at religious services), private devotionism (prayer, scripture reading), and psychological commitment (salience, "provides guidance"). However, after extensive research and comparison to other measures, Mockabee concluded that “frequency of attendance at religious services and frequency of prayer stand out as the two items most uniformly considered very important by members of all major religious traditions” (p. 687). He concluded that an additive scale that combines prayer, scripture reading, attendance and the belief that these provide guidance is adequate for most purposes.

More specific questions above the normal measures have been asked by some researchers to solicit greater measures of religiosity. Hunsberger (2001) added a number of questions that are interesting to our study. These were:

1. Right now, how religious a person would you say you are? [0-6 scale]
2. To what extent would you say you still hold the religious beliefs taught you when you were growing up? [0-6 scale]
3. To what extent would you say that your religious beliefs have changed since coming to the university? [-4 to +4 scale] (p. 267)

Other studies have added different elements in an attempt to refine measures of commitment. For example, Olson (2001) utilized financial giving as one of the measures of religious commitment. A more complete listing of various measurement techniques and the questions used was developed by Bucher (1991). However, those studies that have attempted to be more ecumenical and able to measure across religious and denominational lines have concentrated on attendance at religious services, prayer and

meditation and, often, scripture reading as the critical measures of religiosity. This study followed that pattern in developing the specific measures used here. It should be noted that these measures are consistent with our original definitions of religious commitment and religiosity.

CHAPTER THREE: METHODOLOGY

Study Population

Unlike previous studies of a limited number of schools, this study attempted to apply proven research methods to a broad population of college-bound students attending a large number of colleges with a variety of affiliations. Without incurring staggering costs, a database of adequate size and longitudinal design was only available from the Higher Education Research Institute (HERI) at the University of California, Los Angeles, through its Cooperative Institutional Research Program (CIRP) and the College Student Survey (CSS). Beginning in 1966, the CIRP annual surveys of college freshman have been an integral part of educational research data. A summary document from the Higher Education Research Institute states:

The Cooperative Institutional Research Program (CIRP) was established at the American Council on Education as a longitudinal study of the American higher education system, and time has proven that CIRP data have been invaluable to education researchers and policy makers....the CIRP publications and research based on CIRP data are among the sources most cited by researchers in higher education. (Astin, Higher Education Research Institute, & American Council on Education, 1997, p. ix)

Each year the CIRP has surveyed approximately 350,000 full-time freshmen at a sample of approximately 700 colleges and universities in the United States. The report of the 1998 survey included 383,185 respondents from 668 colleges and universities. Of those, 275,811 first-time full-time freshmen from 469 college and universities were included in the national norms (Sax, Astin, Korn, Mahoney, & Higher Education Research Institute, 1998).

Beginning in 1993, the College Student Survey (CSS) was initiated to permit individual campuses to conduct follow-up studies of their students. At this point, over

750 institutions and 230,000 students have participated in the CSS (Higher Education Research Institute, 2002b). Although there has been no national report or formal annual summary, the CSS has been utilized by researchers to allow longitudinal analyses across the college years.

Again, the CIRP is a survey of freshman with the CSS targeted toward the end of the baccalaureate career. In most years, about 50% those who complete the CSS will have data from an earlier CIRP on file. In this way, many researchers have been able to provide a longitudinal analysis of their institutions and, with permission from HERI, gain access to study a sample of the national college student population. Through the kind permission of the HERI administrative team, access to the 2002 CSS data files was provided for this project. This was the most recent study set available.

The 2002 CSS had 35,187 cases of which 18,554 had CIRP data (Higher Education Research Institute, 2002a). Although the 2001 and 2000 CSS files had larger data sets, the 2002 CSS file was chosen because it was more current and appeared to have been a year of greater participation for private colleges while still maintaining a substantial number of responses from students attending public institutions. Apparently, the Council for Christian Colleges and Universities (CCCU) had encouraged its membership to participate in that year particularly. Initially, it was assumed that the 2001 CSS would be utilized; however, after completing the affiliation identification portion discussed below, it was found that fewer than expected denomination-related institutions had participated that particular year. If the 2001 CSS data had been utilized, many denominationally affiliated colleges would have been absorbed in its general categories. For example, Baptist institutions would have had to be absorbed into another category of

Protestant institutions thereby limiting any specific discussion about one of the largest groups of denominational-affiliated colleges in the United States. Again, a debt of gratitude is owed the HERI Steering Committee for allowing access to the more recent 2002 CSS file somewhat ahead of typical public use.

To be included in this study, any record had to meet five critical test criteria. First, any included CSS record had to have a corresponding CIRP record. This allowed testing of changes over time for important test variables. Second, included records had to have CSS and CIRP results from the same institution (SAMEACE = 2 meaning “Yes”). This was stipulated in order to confine any impact on the test variables to attendance at a particular institution. It was recognized that a student could have taken the CIRP at the institution, transferred to another institution and then returned to the original institution in time to take the CSS. It was assumed that this circumstance could not be avoided but would be of minimal consequence. As will be discussed, it was clear from the results of the research that few students could have fallen into this category.

Third, all included records had to have a CSS measurement at least in the third year after taking the CIRP. As the CSS enrollment year was 2002, this meant that the CIRP year had to be 1999 or earlier (SIFYEAR < 2000). Two and a half years was determined to be the minimum time elapsed between measurements, and this lapse could only occur if someone took the CIRP as late as the Fall of 1999 and the CSS in the Spring of 2002. As will be shown, only 4.8% of all test subjects actually were at this minimum amount of time between measurements. Although encouraged by HERI to administer the CSS during the latter part of the senior year, the CSS can be given at a timing of the institution’s own choosing. In some cases and for whatever reason, some institutions had

administered the CSS within a few months of the CIRP. To ascertain longitudinal impact, it was determined that a student needed to be in at least the third year of attendance between the two measurements.

Fourth, the student had to be enrolled as a full-time undergraduate when the CSS was taken (ENROLL02=1). This eliminated the potential confusion of part-time student responses. Additionally, this also required the subjects to still be enrolled as undergraduates. Realizing that students could have been part-time between taking the CIRP and the CSS, this was a recognized limitation but assumed to be of minimal impact. Fifth, a known affiliation and control type had to be applicable to the institution the student attended. The methodology for determining affiliation and control will be explained below.

For the 2002 CSS data set that contained 35,187 records with 18,554 matching CIRP records, it was found that 15,895 records met all five critical test criteria. As the selected records represented 45.17% of all those who took the CSS in 2002, this seemed to be an adequate sample of records. The adequacy of this sample's representation of all 2002 college seniors will be discussed in the concluding remarks.

For those research questions that depended on the affiliation of the college attended, a table was prepared by the researcher to cross reference the list of participating colleges to affiliation codes. This cross reference to the CSS college identification number (CSSACE) was utilized by the HERI staff to populate a number of fields indicating the college's affiliations that were utilized in the study. Due to HERI's pledge of institutional and individual confidentiality, this method of institutional affiliation identification required many individual determinations and was a rather time-consuming

process. However, this guaranteed that the researcher could not attribute any finding to a particular institution because the actual identity of any respondent's attended college was completely hidden. This effort was deemed vital to this study in that the use of a proper affiliation code allowed grouping by affiliation for investigating the research questions.

Determining College Affiliation and Membership

As stated above, identifying any participating college's affiliation or control for inclusion in the cross-reference table was a multi-step process. A listing of the 133 institutions who participated in the 2002 CSS and met the selection criteria specified above was provided by HERI and included as Appendix A. This listing includes the final coding used by the research (SHAFFIL) and the institutions membership in CCCU or NACCAP. The specific steps taken to categorize the institutions were as follows:

1. Determined the general affiliation as reported in the *2003 Higher Education Directory* (HED). Although this directory was from one year later, this listing more likely reflected the affiliation of the college if any changes in affiliation were being made during the tested period. As college affiliation changes are not instantaneous and the directory takes some time to compile for a current year's printing, this directory was determined to be the more accurate authority on current affiliation. This was the most recent directory available at the time of the study. The list of possibilities is included as Appendix B.
2. For those identified as Independent Non-Profit (HED code #21), the institution's web-site was reviewed to determine if there was any overall religious commitment in the mission or purpose statements. Seeking more than just statements regarding the history or tradition of the college, the mission statement

was reviewed for a clear reference to a current commitment to any faith-based education. These Independent Non-Profit institutions were classified by this method as “Independent–No Affiliation,” “Independent–Catholic,” “Independent–Protestant,” or “Independent–Other” recognizing that for this study the “Non-Profit” portion was superfluous. Although the specific wording that was used in any affiliation decision is public information from the subject college’s web-site, providing this language and the rationale for the decision on any specific college in this document would be more identification than allowed under HERI’s confidentiality guidelines. The clear mandate was to find in the college’s own documentation a current commitment to faith-based education and, if so, to ascertain as specifically as possible which of the above classifications best fit that college’s religious or non-religious affiliation. For example, statements such as “empower students for a life of enduring commitment to Christ” or “identifies itself as Catholic and Dominican in tradition” were used with other statements within the mission and purposes materials to indicate, respectively, an affiliation of Independent–Protestant and Independent–Catholic. Whereas, “private, co-educational, non-sectarian institution of higher education” would be classified as Independent–No Affiliation. Most statements were clear as to proper designation that should be chosen.

3. The affiliations from the HED and the expansion of the Independent Non-Profits were collapsed into groups with no fewer than five institutions to protect the identity of any participating college. This required some groupings of smaller denominations in keeping with relationships stated in the *Handbook of*

Denominations in the United States (Mead & Hill, 1995). A discussion of denominational relationships utilized is included as Appendix C. Additionally, this method required the elimination of the category “Independent–Other” as there were too few institutions in this data set and no rationale for combining with another group.

4. Current membership in the Council of Christian Colleges and Universities (CCCU) was determined from the listing of participating institutions on their web-site (www.cccu.org) and used as an identifier. The appropriate column of Appendix A identifies those institutions identified as members of CCCU.
5. Current membership in the National Association of Christian College Admissions Personnel (NACCAP) was determined using a listing provided by the association and used as an identifier. The appropriate column of Appendix A identifies those institutions identified as members of NACCAP.
6. Membership in the Accrediting Association of Bible Colleges (AABC) or the Association of Southern Baptist Colleges and Schools (ASBCS) and the Association of Southern Baptist Admissions Professionals (ASBAP) were abandoned as identifiers as fewer than five institutions in this data set were found to be members of each organization.
7. An additional institutional affiliation identifier was assigned to match the student religious preference response categories. These were broader than the HED categories and required some collapsing to match. Ultimately, this identifier was not utilized in the study.

In further explanation of step two above, refining the “Independent Non-Profit” category was necessary because many religiously affiliated institutions had chosen this designation on their annual update forms used to compile the annual *Higher Education Directory*. Because of this institutional choice, this designation included clearly religious institutions (Oral Roberts University, John Brown University, Regent University, etc.) with many other non-religiously affiliated private institutions (Harvard University, Stanford University, Princeton University, etc.). The proper handling of this ambiguity required retaining the “Independent Non-Profit” category with the further delineations provided above. Again, the “Non-Profit” portion was dropped to save space but should be understood given that all colleges in this study were non-profit institutions.

Although a stratification of degree of religious orientation was considered using systems such as Cuninggim's continuum of denominational types (Gough, 1981), it was determined that utilizing the institution's self-identification and reviewing the mission statement for current affiliation, support or commitment in those cases where the self-identification was inadequate or ambiguous was sufficient for the purposes of this study. Table 1 presents the affiliation groupings determined using this method with the number of institutions and subject in each.

Table 1

Institutional Affiliations, Subject Counts and Averages

<u>Affiliation Title</u>	<u>Code^a</u>	<u>Institutions</u>	<u>Subjects</u>	<u>Average</u>
State	120	13	1367	105.15
Independent Non-Profit				
No Affiliation	210	31	4347	140.23
Catholic	211	8	1654	206.75
Protestant	212	10	1193	119.30
Roman Catholic	300	27	4407	163.22
Baptist	540	6	371	61.83
Presbyterian	660	6	615	102.50
Anabaptist	690	11	689	62.64
Methodist and Nazarene	710	8	382	47.75
Lutheran and Reformed	970	6	418	69.67
<u>Other Protestant</u>	<u>790</u>	<u>7</u>	<u>452</u>	<u>64.57</u>
Totals		133	15895	119.51

^aThe affiliation code shown is actually SHAFFIL.

A more complete listing of the actual denominations that made up each of the groupings listed above is provided in Appendix D. The identity of any participating college is only shown in Appendix A but HERI has allowed the disclosure of the affiliation code for each participating institution. This enables those with interest to see which institutions were included within any category. Comments on this data set's degree of representation of the general college population will be provided in the concluding chapter.

Table 2 presents the counts of the institutions and subjects that were identified as members of CCCU or NACCAP. Measuring the changes in religiosity for member and non-member institutions for both of these organizations was deemed to be an institutional affiliation designation worth exploring in this study. These organizations combine through their membership criteria many denominationally affiliated institutions with many of those in the Independent–Protestant category. This provided a broader designation of Protestant colleges for this study. The membership criteria of each organization were addressed in the introductory comments and definitions sections.

Table 2

Institutional Memberships, Subject Counts and Averages

<u>Organization</u>	<u>Institutions</u>	<u>Subjects</u>	<u>Average</u>
CCCU			
No	95	13015	137.00
Yes	38	2880	75.79
Total	133	15895	119.51
NACCAP			
No	99	13387	135.22
Yes	34	2508	73.76
Total	133	15895	119.51

Variables

In general, this study relied on two types of measurements: (a) comparison of responses on similar questions from the beginning of the college experience with those from near completion of the baccalaureate college career and (b) responses gathered from only the beginning or the end of the college experience. Again, by the use of the requirements for institution/subject inclusion listed above, it was expected that the results would reflect the student responses given through the CIRP at the beginning of the student's college experience and those from the CSS near the end of that experience. Given that many students complete college in four-to-five years, it was expected that the majority of students would have used the CIRP administered in 1998 or earlier. The descriptive statistics presented later show the distribution of test years. HERI included the properly paired responses from whenever the student took the CIRP in the CSS data set.

Appendix E contains the entire list of questions of possible interest related to religiosity that were included in the data file. This listing is based on the 2002 CSS with the included CIRP questions in that data set. It includes a comment or reason of why the field was or was not utilized in the study. Section A items are from the CSS section of the file, while section B items are from the CIRP. Note that although some of the questions were contained in the total CSS data set, these were only used by HERI to fulfill the selection rules stipulated above and to provide the required affiliation coding prescribed by the researcher.

From this large list of possible related questions, those most relevant to this particular study of religiosity were identified based on the value shown in previous research as discussed in the literature review. Although personal characteristics (gender,

ethnicity, etc.) may have been interesting, reporting change by these variables was beyond the scope of this study. Possible questions from the full data set presented in Appendix E that had little to contribute to the purpose of this study and its specific research questions are not listed below. This study also relied on variables recoded from existing variables. One variable was recoded so that the scales of the related CIRP and CSS items would match. One composite variable was created for a special purpose using a number of existing variables converted to standard scores (z-scores). This variable, Religiosity Composite Change (RLGSCMP1), was used as the main measure of the change in religiosity related activities and student self-measures. Table 3 lists all of the variables used in this analysis, the research question it was used to answer and any comments on its purpose or creation. The next chapter presents descriptive statistics for these variables.

Table 3

Variables Used With the Related Research Question(s)

Variable	Explanation	Question(s)	Comments
<u>Institutional Affiliation/Membership Variables:</u>			
SHAFFIL	Institution's Affiliation coded by Researcher	1, 3, 4	Created as indicated by HED code and review of mission/purpose statements on web-site
CCCU	Membership in CCCU	1, 3, 4	Coded by researcher in comparison to CCCU list
NACCAP	Membership in NACCAP	1, 3, 4	Coded by researcher in comparison to NACCAP list
<u>Student Religious Identification Variables:</u>			
SIFRELIG	CIRP Religion	2, 3, 4	Student's CIRP religion
CSSRLRC	CSS Religion Recoded	4	Student's CSS religion (CSSRLDG) recoded to match the codes used in the CIRP (SIFRELIG)
RELCHANG	Change in Student Religious Preference	4	Change from SIFRELIG (CIRP) to CSSRLRC (recoded CSS), values: 0 (one or both values missing), 1 (no change) or 2 (changed)

Table 3 – continued

Variables Used With the Related Research Question(s)

Variable	Explanation	Question(s)	Comments
<u>Religious Activity Variables:</u>			
ATTSVCHG	Change in Relig. Service/Church Attendance	1	GENACT06 - SIFACT03, range from -2 to +2
PRYMDCHG	Change in Prayer/Meditation	1	CSSHPW15 - SIFHPW11, range from -7 to +7
RLGDSCHG	Change in Discussion of Religion	1	GENACT15 - SIFACT07, range from -2 to +2
<u>Overall Religiousness Variables:</u>			
SPIRTCHG	Change in Spirituality	1	CSSRAT17 - SIFRAT17, range from -4 to +4
CSSRAT20	Religiousness/Religiosity Compared to Average Person Your Age	1	Range from +1 to +5
SLFCHG07	Change in Religious Beliefs and Convictions Compared to When You First Started College	1	Range from +1 to +5
RLGSCMP1	Religiosity Composite Change	1, 2, 3	Mean of all six standardized change variables (converted to z-scores)

Appendix F provides the scale of the items used in the appropriate survey instrument that created the ranges shown in Table 3. Note that the ranges of the difference variable listed in Table 3 created scales that were difficult to compare in some cases. For that reason, change variables were also created with standard scores. Variables were also created that simply showed whether there was a change of any kind with -1 indicating a decline, 0 representing no change and +1 showing an increase, however, these were not used in the subsequent analysis.

As mentioned, this final listing of variables includes those that were based on longitudinal measures (both pre- and post-questions) as well as those that were used as single self-reported measures of the change in religiosity. For example, the CSS question rating the student's religiousness/religiosity (CSSRAT20) asks the student to compare against the average person his or her age. Although this is not a pre-post question, this question was viewed as relevant to this study because it provided a self-reported measure comparing the student to the population of persons his or her age. As will be discussed further in the limitations section, the question related to frequency of attending a religious service, although available in both the CSS and CIRP, had to be utilized and interpreted carefully because some religiously affiliated institutions required on-campus chapel attendance. Whether or not this was regarded by the respondent as fulfilling the requirement of attending a religious service is a matter of debate that will be discussed later.

As stated earlier, after finding that the 2001 CSS had too few private church-related colleges in too many categories, it was determined that the 2002 CSS would be most appropriate for this study. This also allowed use of the most recent data file and a

much larger number of denominationally affiliated schools. However, one of the critical comparisons possible with the 2001 CSS had to be abandoned – a comparison of answers on “born-again” identification of both CIRP and CSS respondents. The critical question included in previous CSS data files, “Do you consider yourself a born-again Christian?” for both the CIRP and CSS responses (SIFBORN and CSSBORN respectively) was not included in the 2002 CSS data set. It was not asked in the 1998 CIRP nor the 2002 CSS. Comparisons on this variable to Railsback’s (1994) dissertation were not possible. Other comparisons to what Railsback found nearly a decade ago were possible as discussed in the conclusion to this study.

Testing Methods by Research Question

The research questions of this study were presented in the introductory pages. For each of these questions, a related null hypothesis was developed of no significant difference and tested with appropriate research methods. An alpha level was set for rejecting the null hypothesis at .05. The results are presented in the next chapter.

The study research questions and the testing methods utilized are detailed below:

1. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the affiliation of the educational institution attended?

The six variables that measured the change in attendance, prayer and meditation, discussion of religion, spirituality, religiousness/religiosity and religious beliefs and convictions (ATTSVCHG, PRYMDCHG, RLGDSCHG, SPIRTCHG, CSSRAT20 and SLFCHG07 respectively) as well as the religious composite change variable (RLGSCMP1), the mean of all six standardized change variables,

were all analyzed for all institutional denomination affiliations (SHAFFIL) as well as for membership in CCCU and NACCAP. Analysis of Variance was used to test the null hypothesis that the means of each denominational group were the same. The Tukey HSD (honestly significant difference) post-hoc test was used as a follow-up procedure to identify homogeneous subsets. For CCCU and NACCAP, independent samples *t*-test procedures were used to measure the change variables by whether the school was or was not a member of these groups.

2. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the stated religion or denomination of the incoming student?

The religiosity composite change variable (RLGSCMP1) was used to compare the change in overall religiosity by the student's incoming religious preference (SIFRELIG). Analysis of Variance was used with a post-hoc Tukey–HSD follow-up procedure.

3. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the stated religion or denomination of the incoming student as well as the affiliation of the educational institution attended?

A separate Analysis of Variance was run for the religiosity composite change variable (RLGSCMP1) for each of the denominational affiliations included in the study (SHAFFIL) as well as membership in CCCU or NACCAP by the student's incoming religious preference (SIFRELIG). In all cases a Tukey–HSD follow-up procedure was run. Additionally, those colleges identified as State and

Independent–No Affiliation as well as Independent–Catholic and Catholic were combined for a more complete comparison.

4. Is there a significant difference between the college student's incoming religion or denomination with that of the student's religion or denomination at the end of the undergraduate college career and the affiliation of the educational institution attended.

A variable (RELCHANG) was populated to indicate whether either the student's incoming (SIFRELIG) or exiting (CSSRELRC) religious preference was missing (recoded to 0), the same (recoded to 1) or changed (recoded to 2). Crosstabs with Chi-Square correlations were run for all combinations.

The following chapter outlines the findings derived using the methodology presented here. Limitations based on the instrument and the variables utilized in this study will be discussed in the final chapter.

CHAPTER FOUR: FINDINGS

Study Population Statistics

As indicated in the methodology section of this study, the large data set was analyzed to answer the research questions with a number of statistical tests. This chapter first provides overall descriptive statistics and frequencies and then presents the results of the tests by research question.

The total 2002 CSS data set was filtered to 15,895 records that met the selection criteria presented in a prior chapter. In general, any included CSS record had to have a corresponding CIRP record from the same institution; the CSS measurement must have been from at least the third year after taking the CIRP; the student had to be enrolled as a full-time undergraduate when the CSS was taken, and a known affiliation and control type had to be applicable to the institution the student attended. It should be noted that in this study, references to “respondents” should be interpreted as “qualified respondents” – those that met all of the selection criteria. Any exceptions to these reference rules will be noted in the related text.

Table 1, presented in a previous chapter, provides an overall count of the number of institutions and students by affiliation category. Overall, the average number of respondents per institution was 119.51. It is noted that the average number of respondents per affiliation category was highest for Catholics and least for Methodist and Nazarene schools. Protestant denomination affiliated institutions all had an average participation of less than 70 students except for Presbyterian schools (102.5). However, Independent-Protestant institutions had an average participation at almost exactly the mean. Interestingly, the participating state institutions also had an average of only 105 students

taking the CSS who met the selection criterion. This is surprising as one would assume that state schools would have had much larger populations than others in the study. This issue will be returned to in the discussion of the study limitations in the final chapter. It is also noted that the average number of respondents from CCCU and NACCAP schools was 75.79 and 73.76 respectively, while non-CCCU and non-NACCAP schools averaged 137.00 and 135.22 respectively. The question of the substantially smaller number of respondents from CCCU and NACCAP schools will also be addressed in the concluding remarks.

Among the five selection criteria, the time between taking the CIRP and the CSS was determined to be critical to allow the culture and climate of the institution to influence the student. As was discussed earlier, this study required a CSS respondent to have taken the CIRP at least three years earlier. Table 4 provides the breakdown by year the CIRP was taken.

Table 4

Participants by Year Freshman Survey (CIRP) Administered

<u>Year</u>	<u>Frequency</u>	<u>Percent of Total</u>	<u>Cumulative Percent</u>
1995	19	0.1	0.1
1996	79	0.5	0.6
1997	768	4.8	5.4
1998	14269	89.8	95.2
1999	760	4.8	100.0
Total	15895	100.0	100.0

Of main interest here is that over 95% of the qualified respondents who took the CSS in 2002, took the CIRP in 1998 or earlier with nearly 90% taking the CIRP in 1998 alone. With attendance at least into the third year, any impact of college affiliation in terms of its climate and culture would have sufficient time to have an effect. Comparing the year of taking the CIRP with the year of entering the student's first college and the current college were also revealing. Although there are limitations to the accuracy of self-reported responses, 66.7% of all respondents reported entering their first college in 1998 or earlier while 77.3% of respondents reported entering the current college in 1998 or earlier. With nearly 30.1% of respondents failing to mark the year of first entering college and 17.9% failing to mark the year of entering the current college, it was clear that the choice of using HERI's notation of the year of taking the CIRP was far more accurate. Again, HERI's notation of the CIRP response college was utilized for identifying a CIRP from the same college as the CSS response. This was an important factor in selecting a particular respondent into the data set.

Ascertained from the student responses was that the majority of respondents did take the CIRP in their first year in college at the same school for which a CSS response was eventually obtained. Again, there was no way to identify the students who transferred out and then returned to the same college and, therefore, no way to measure the impact of this potential data evaluation problem. Although noted as a limitation of this study, it was expected that this percentage would be extremely small. It could also be argued that because 93.8% of the valid respondents entered their first college in 1998 or later, 94.7% of the respondents entered the current college in 1998 or later and 94.3% were expecting to graduate in 2002, the issue of transfers leaving the school going

elsewhere and returning was seen to be of minimal possibility. For the purposes of this study, this finding allowed any impact of the college environment on the religiosity of the student to be attributed to the school of record on the CIRP/CSS.

Through a review of the descriptive statistics, it also seemed reasonable to assume that the vast majority of students took the CSS in their senior year of college. Although the actual administration of the CSS is at the college's discretion, the descriptive statistics discussed above showed that of those who took the 2002 CSS, over 94% expected to have obtained a Bachelor's degree by June, 2002. Contrary to national norms, the vast majority of respondents expected to finish their undergraduate studies within four years. This seemed reasonable because, as shown in Table 1, 91.4% of the respondents were attending private institutions.

Frequencies of variables of general interest for understanding the study population are noted in Table 5. As mentioned earlier, a discussion of the degree of representation of the total college population is provided in the concluding remarks. The means (*M*) and standard deviations (*SD*) are provided as instructive statistics for the distribution of responses even though these are categorical variables.

Table 5

Overall Statistics and Frequencies for Selected Variables

<u>Variable</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Gender (CSSSEX)		
1: Male	5714	36.0
2: Female	10159	64.0
Missing	22	
Ethnicity (CSSRCES1-9)		
White/Caucasian	13563	85.3
African American/Blk	555	3.5
American Indian/Alsk	157	1.0
Asian American/Asian	769	4.8
Native Hawaiian/Pac Is	102	0.6
Mexican Amer/Chicano	328	2.1
Puerto Rican American	131	0.8
Other Latino	292	1.8
Other	491	3.1
Missing	NA	

Table 5 – continued

Overall Statistics and Frequencies for Selected Variables

<u>Variable</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Average College GPA – CSS (COLLGPA)		
1: C- or less	6	<0.1
2: C	239	1.5
3: B- or C+	1505	9.5
4: B	4862	30.7
5: A- or B+	6687	42.2
6: A	2547	16.1
Missing	49	
	<i>M</i> = 4.62	<i>SD</i> = .92
Political Orientation in 2002 – CSS (CSSPOLVW)		
1: Far right	126	0.8
2: Conservative	3707	23.8
3: Middle-of-road	7018	45.0
4: Liberal	4293	27.5
5: Far left	447	2.9
Missing	304	
	<i>M</i> = 3.08	<i>SD</i> = .81

Table 5 – continued

Overall Statistics and Frequencies for Selected Variables

<u>Variable</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Miles from College to Home – CIRP (DISTHOME)		
1: 10 or less	1419	9.1
2: 11-50	3003	19.2
3: 51-100	2514	16.1
4: 101-500	5892	37.7
5: >500	2800	17.9
Missing	267	
	<i>M</i> = 3.36	<i>SD</i> = 1.23
Religious Affiliation/Orientation of College – Importance in decision – CIRP (CHOOSE14)		
1: Not important	8065	52.2
2: Somewhat important	3908	24.6
3: Very important	3488	22.6
Missing	434	
	<i>M</i> = 1.70	<i>SD</i> = .81

Table 5 – continued

Overall Statistics and Frequencies for Selected Variables

<u>Variable</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Planned Residence for Fall – CIRP (PLANLIVE)		
1: With parents	1485	9.4
2: Other private	170	1.1
3: Dormitory	13961	88.0
4: Frat/sorority	81	0.5
5: Other campus	142	0.9
6: Other	20	1.1
Missing	36	
	<i>M</i> = 2.83	<i>SD</i> = .64

In general, the frequencies of the general personal characteristics presented in Table 5 show that the majority of respondents were female (64%) and white (85.3%). For main indicators taken toward the end of the college experience, 89% percent reported a cumulative college GPA on the CSS of a “B” or higher. Additionally, the political orientation of the total CSS respondent population appeared to be normally distributed with a slight skew to the left. Nearly half (45%) of the respondents labeled themselves as middle-of-road in their political views. More than half of the respondents (52.2%) reported that the religious affiliation or orientation of the college was not important with only 22.6% of the respondents reporting this as very important. Interestingly as shown in Table 1, 64% of the respondents (10,181 of the 15,895 chosen participants) attended a faith-related institution of some type.

The review of relevant literature noted that there is a difference in overall religious commitment by gender with females being found to be more religious than males. As was also noted, although there may be differences by gender in religious commitment, it was assumed for the purposes of this study that the degree of change in religiosity by gender will be similar and proportionate. Again, it was interesting to note that 64% of the respondents were female. Although the difference in change by gender was not a focus of this study, it will be commented on in the concluding remarks.

Also, from Table 5, it is noted that from the CIRP respondents, although 28.3% of respondents would have been within commuting distance of 50 miles or less, only 10.5% planned to live at home or in other private off-campus housing. The vast majority of students (88.9%) planned to live in college dorms or other campus housing. Of course, whether they did or did not actually live in college housing would be important to know when attempting to measure the impact of the college experience.

Descriptive Statistics and Frequencies of Dependent Variables

The frequencies of those variables that were used more extensively in this study in the measurement of change in religiosity are presented in Table 6. The dependent variables for this study include measures of change in religious service/church attendance, prayer/meditation, discussion of religion, and spirituality. Two other variables were also included: religiousness/religiosity compared to the average person of the respondent's age and overall change in religious beliefs and convictions. These variables are discussed below and in Appendices E and F.

Table 6

Religiosity Related Frequencies

Item of Interest	CIRP Question	Frequency	Percent of Valid	CSS Question	Frequency	Percent of Valid
Attended a religious service in the last year						
1: Not at all	SIFACT03	1727	10.9	GENACT06	4101	26.0
2: Occasionally	SIFACT03	5071	32.1	GENACT06	6280	39.7
3: Frequently	SIFACT03	9002	57.0	GENACT06	5421	34.3
Missing	SIFACT03	95		GENACT06	93	
		<i>M</i> = 2.46	<i>SD</i> = .68		<i>M</i> = 2.08	<i>SD</i> = .77
Discussed religion in the last year						
1: Not at all	SIFACT07	1937	13.0	GENACT15	2245	14.2
2: Occasionally	SIFACT07	7750	52.1	GENACT15	8824	56.0
3: Frequently	SIFACT07	5174	34.8	GENACT15	4693	29.8
Missing	SIFACT07	1034		GENACT15	133	
		<i>M</i> = 2.22	<i>SD</i> = .66		<i>M</i> = 2.16	<i>SD</i> = .65

Table 6 – continued

Religiosity Related Frequencies

Item of Interest	CIRP Question	Frequency	Percent of Valid	CSS Question	Frequency	Percent of Valid	
Prayer/Meditation in typical week (hours)							
1: None	SIFHPW11	3722	24.5	CSSHPW15	5559	35.3	
2: <1	SIFHPW11	5178	34.1	CSSHPW15	4549	28.9	
3: 1-2	SIFHPW11	4234	27.9	CSSHPW15	3560	22.4	
4: 3-5	SIFHPW11	1428	9.4	CSSHPW15	1420	9.0	
5: 6-10	SIFHPW11	425	2.8	CSSHPW15	442	2.8	
6: 11-15	SIFHPW11	104	0.7	CSSHPW15	85	0.5	
7: 16-20	SIFHPW11	43	0.3	CSSHPW15	33	0.2	
8: >20	SIFHPW11	66	0.4	CSSHPW15	83	0.5	
Missing	SIFHPW11	695		CSSHPW15	164		
		<i>M</i> = 2.37	<i>SD</i> = 1.16			<i>M</i> = 2.20	<i>SD</i> = 1.22

Table 6 – continued

Religiosity Related Frequencies

<u>Item of Interest</u>	<u>CIRP Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>	<u>CSS Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Religious beliefs and convictions compared to when you first started college						
1: Much weaker	NA			SLFCHG07	407	2.6
2: Weaker	NA			SLFCHG07	1211	7.7
3: No change	NA			SLFCHG07	6338	40.3
4: Stronger	NA			SLFCHG07	4976	31.6
5: Much stronger	NA			SLFCHG07	2794	17.8
Missing	NA			SLFCHG07	169	
				<i>M</i> = 3.54	<i>SD</i> = .96	

Table 6 – continued

Religiosity Related Frequencies

<u>Item of Interest</u>	<u>CIRP Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>	<u>CSS Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Self-rating of spirituality compared to average person your age						
1: Lowest 10%	SIFRAT17	452	2.9	CSSRAT17	614	3.9
2: Below average	SIFRAT17	1590	10.1	CSSRAT17	1731	11.1
3: Average	SIFRAT17	5687	36.2	CSSRAT17	6007	38.5
4: Above average	SIFRAT17	5392	34.4	CSSRAT17	5258	33.7
5: Top 10%	SIFRAT17	2568	16.4	CSSRAT17	2002	12.8
Missing	SIFRAT17	206		CSSRAT17	283	
		<i>M</i> = 3.51	<i>SD</i> = .98		<i>M</i> = 3.40	<i>SD</i> = .98

Table 6 – continued

Religiosity Related Frequencies

<u>Item of Interest</u>	<u>CIRP Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>	<u>CSS Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Self-rating of religiousness/religiosity compared to average person your age						
1: Lowest 10%	NA			CSSRAT20	1561	10.0
2: Below average	NA			CSSRAT20	2357	15.1
3: Average	NA			CSSRAT20	6088	39.0
4: Above average	NA			CSSRAT20	4088	26.2
5: Top 10%	NA			CSSRAT20	1503	9.6
Missing	NA			CSSRAT20	298	
				<i>M</i> = 3.10	<i>SD</i> = 1.09	

Table 6 – continued

Religiosity Related Frequencies

Item of Interest	CIRP Question	Frequency	Percent of Valid	CSS Question	Frequency	Percent of Valid
Student's Religious Preference						
1: Baptist	SIFRELIG	1141	7.3	CSSRLRC ^a	1062	6.8
2: Buddhist	SIFRELIG	105	0.7	CSSRLRC	149	1.0
3: Eastern Orthodox	SIFRELIG	119	0.8	CSSRLRC	130	0.8
4: Episcopal	SIFRELIG	357	2.3	CSSRLRC	318	2.0
5: Islamic	SIFRELIG	55	0.4	CSSRLRC	57	0.4
6: Jewish	SIFRELIG	235	1.5	CSSRLRC	235	1.5
7: LDS (Mormon)	SIFRELIG	33	0.2	CSSRLRC	24	0.2
8: Lutheran	SIFRELIG	618	4.0	CSSRLRC	539	3.4
9: Methodist	SIFRELIG	784	5.0	CSSRLRC	725	4.6
10: Presbyterian	SIFRELIG	784	5.0	CSSRLRC	739	4.7
11: Quaker	SIFRELIG	48	0.3	CSSRLRC	44	0.3
12: Roman Catholic	SIFRELIG	6200	39.8	CSSRLRC	5821	37.2

Table 6 – continued

Religiosity Related Frequencies

<u>Item of Interest</u>	<u>CIRP Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>	<u>CSS Question</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Student's Religious Preference – continued						
13: Seventh Day Advent	SIFRELIG	21	0.1	CSSRLRC	19	0.1
14: United Christian Ch	SIFRELIG	241	1.5	CSSRLRC	183	1.2
15: Other Christian	SIFRELIG	2668	17.1	CSSRLRC	2654	16.9
16: Other Religion	SIFRELIG	465	3.0	CSSRLRC	637	4.1
17: None	SIFRELIG	1718	11.0	CSSRLRC	2323	14.8
Missing	SIFRELIG	303	NA	CSSRLRC	236	NA

^aStudent's CSS religion (CSSRLDG) was recoded to match the codes used in the CIRP (SIFRELIG).

There are noticeable differences in the religiosity related items of Table 6. In frequency of religious service attendance, while only 10.9% initially reported no church attendance, 26% reported no church attendance in the post-survey. That is an increase of 138.5% in the proportion that category represents of the total population. Further, while 57% reported frequent attendance on the CIRP, this dropped by over twenty percent to 34.3% on the CSS. This is a proportionate drop of nearly 40% of those who had reported frequent attendance on the initial measure. Occasional attendance did increase by 7.6%, possibly due to many of those who had initially reported frequent attendance dropping to the occasional category. For the respondents in this study, it appears that there is rather noticeable overall decrease in the frequency of church attendance between the start and end of the college career.

Although less noticeable than the drop in church attendance, there appears to be a decline in the discussion of religion over the college years. Over 14% of those who reported frequent discussion on the initial measurement were missing from the frequent discussion group in the post-survey.

Similarly, the hours per week spent in prayer and meditation appears to have declined between the two measurements. Although those spending greater than three hours per week in prayer/meditation remained relatively constant, there appears to have been a real shift of those initially spending less time (less than two hours per week) to dropping the practice completely over their college years. Those spending no time in prayer or meditation increased from 24.5% to 35.3%. This is an increase of approximately 44% in the proportion that sub-group represents of the population.

Likewise, self-rating of spirituality appears to have declined between the two measurements. A higher percentage of students rated themselves average or lower on the CSS (CIRP: 49.2%; CSS: 53.5%), while fewer students rated themselves above average or in the top 10% (CIRP: 50.8%; CSS: 46.5%). The largest change was the drop in the percentage of those who rated themselves in the top 10% of the average persons their age on spirituality. The drop from 16.4% of the respondents to 12.8% is a proportionate reduction of nearly 22%.

Interestingly, these declines appear to be ignored by the survey respondents. Only 10.3% reported that their religious beliefs were weaker or much weaker than when they started college. At the same time, almost half of the respondents (49.4%) reported that their religious beliefs and convictions were “stronger” or “much stronger” than when they first started. This is an interesting difference in the measurement of activities (attendance, prayer/meditation and religious discussion) versus the respondents’ view of their religiosity.

The self-rating of religiousness/religiosity compared to the average person the respondents age also is deserving of comment. Consistent with comments in the literature review, more students rated themselves above average or higher on spirituality compared to the average person their age (85%) than those who rated themselves average or higher on religiousness/religiosity (74.8%). Similarly, only 15% rated themselves below average or the lowest 10% on spirituality compared to 25.1% on religiousness/religiosity. This may show that students view themselves as more spiritual than religious toward the end of their college career. Commensurate with this difference, 46.5% of respondents viewed

themselves as above average or higher on spirituality, while a much smaller percentage (35.8%) viewed themselves as above average or higher in religiousness/religiosity.

It is noted that two questions had an abnormally high number of missing responses on the CIRP: discussed religion in the last year with 1,034 missing and prayer and meditation with 695 missing. Because these missing responses are in some cases over ten times the number missing for other questions, it is possible that the missing responses also might be an indication of the question's lack of importance to the respondent of the question. Interestingly, the number missing for the comparable CSS response seems more in line with other measures. The missing responses could be indicative of a "not at all" or a "none" answer.

Nearly 40% (39.8% CIRP; 37.2% CSS) of the respondents indicated their preference was Roman Catholic. Protestant denominations made up a bit larger proportion of the respondents (43.4% CIRP; 40.8% CSS). The changes in percentage by religious preference are interesting. Only two religion groups showed an increase in proportion between the CIRP and the CSS measurements: Buddhist and Other Religion. Those indicating "none" as their religious preference also increased (11.0% CIRP; 14.8% CSS). All other religious preferences either maintained the same proportion or decreased. The following denominations are listed in order of decrease between the two surveys: Roman Catholic (-2.6%), Lutheran (-.6%), Baptist (-.5%), Episcopal (-.3%), Presbyterian (-.3%), United Christian Churches (-.3%), and Other Christian (-.2%). Again, although the decreases are small, it is interesting that no religious group showed any increase over the years of the college experience, except for the two groups listed above (Buddhist and Other Religion). Note also that "Other Religion" does not include other Christian

denominations that were not listed. Those would be included in the “Other Christian” category. Religions such as Islam had their own category. It is expected that the Hindu and Shinto religions would be included among others in this “Other Religion” category. It is noted that HERI did attempt to increase the specificity of the religion options by differentiating “Other Far Eastern” as a separate category in the 2002 CSS. That effort was dropped and re-combined within the Other Religion designation for the 2003 CSS. For this study, any responses for a religious preference of “Other Far Eastern” were recoded for inclusion in the “Other Religion” designation to match the options provided for the CIRP.

Change Variables

As introduced in Table 3 within the methodology section, four change variables were created by taking the difference of measurements for each respondent on the same religious activity measures provided while completing the CIRP and the later CSS. These were the change in religious service/church attendance (ATTSVCHG), change in prayer/meditation (PRYMDCHG), change in discussion of religion (RLGDSCHG) and change in spirituality (SPIRTCHG). Table 7 shows the frequencies and other statistics for these variables. The categories show the change in stages between the CIRP and the CSS responses on the scales of the original variables shown in Appendix F. A negative number shows the respondent indicated a decrease in that item while a positive response indicates an increase. The number represents the steps or stages changed between measurements.

Table 7

Change Variables Statistics and Frequencies

<u>Item of Interest</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Change in Religious Service/Church Attendance (ATTSVCHG)		
-2 stages	812	5.2
-1 stage	5314	33.8
0 stages	8607	54.8
+1 stage	910	5.8
+2 stages	68	.4
Missing	184	
	<i>M</i> = -.38	<i>SD</i> = .69
Change in Prayer/Meditation (PRYMDCHG)		
-7 stages	5	0
-6 stages	13	.1
-5 stages	32	.2
-4 stages	71	.5
-3 stages	212	1.4
-2 stages	1082	7.2
-1 stage	3655	24.3
0 stages	6868	45.6
+1 stage	2207	14.7
+2 stages	620	4.1
+3 stages	160	1.1

Table 7 – continued

Change Variables Statistics and Frequencies

<u>Item of Interest</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Change in Prayer/Meditation (PRYMDCHG) – continued		
+4 stages	65	.4
+5 stages	28	.2
+6 stages	22	.1
+7 stages	7	0
Missing	848	
	<i>M</i> = -.17	<i>SD</i> = 1.18
Change in Discussion of Religion (RLGDSCHG)		
-2 stages	202	1.4
-1 stage	3216	21.8
0 stages	8743	59.3
+1 stage	2476	16.8
+2 stages	106	.7
Missing	1152	
	<i>M</i> = -.06	<i>SD</i> = .68
Change in Spirituality (SPIRTCHG)		
-4 stages	25	.2
-3 stages	128	.8
-2 stages	912	5.9
-1 stage	3842	24.9

Table 7 – continued

Change Variables Statistics and Frequencies

<u>Item of Interest</u>	<u>Frequency</u>	<u>Percent of Valid</u>
Change in Spirituality (SPIRTCHG) – continued		
0 stages	6879	44.6
+1 stage	2875	18.7
+2 stages	643	4.2
+3 stages	91	.6
+4 stages	17	.1
	<i>M</i> = -.11	<i>SD</i> = 1.00

The items in Table 7 validate the point stated earlier. There appears to be an overall average decrease in every indicator of religious activity between the CIRP and CSS measurements. While only 6.2% of respondents showed an increase in religious service/church attendance, 39% indicated a decrease. Although less pronounced, 20.6% indicated an increase in prayer/meditation while 33.7% indicated a decrease. For religious discussion, 17.5% indicated an increase while 22.2% reported a decrease. Similarly, 23.6% view themselves as more spiritual while 31.5% indicated a decrease.

For a more complete view of change in religious commitment or religiosity, the four change variables were coupled with the two CSS only questions: religiousness/religiosity compared to the average person your age (CSSRAT20) and change in religious beliefs and convictions (SLFCHG07). The respective frequencies for these variables were presented in Table 6.

Comparing the decreases in the change variables above with the self-reported ratings of the strength of religious beliefs and convictions in relation to when the student first started college (SLFCHG07) seems to underscore the respondent's contradiction of the activity indicators. Although it appears that on average respondents attended church less, spent less time in prayer or meditation, reported their spirituality as being less and discussed religion less, only 10.3% reported that their religious beliefs and convictions were weaker, while 49.4% reported that these beliefs and convictions were stronger than when they first started college. This apparent contradiction will be discussed in the conclusions of this study.

One last CSS variable was included in the overall review of self-reported change indicators. As reported earlier in the discussion of Table 6, students were asked to rate their religiousness/religiosity as compared to other persons their age (CSSRAT20). Although there was no comparable CIRP measurement, it was determined that this variable could also shed some light on perceived religiousness. Again, 74.8% of students reported that their religiousness/religiosity was average or above although the change indicators would suggest a significant decline during the college years.

Two of the variables had the same change scale: Change in Religious Service/Church Attendance (ATTSVCHG) and Change in Discussion of Religion (RLGDCHG). The respective means (-.38 and -.06) with similar standard deviations (.69 and .68) indicate that average attendance dropped almost six times as much as the rather minor drop in the discussion of religion.

Change Variable Scale Reliability and Correlations

The reliability of the change variables is an important consideration for this study. The reliability coefficient alpha for the four change variables (ATTSVCHG, PRYMDCHG, SPIRTCHG and RLGDSCHG) was rather low at .48. Further, deleting any item decreased the alpha for the remaining items as follows: ATTSVCHG reduced the alpha to .40, PRYMDCHG to .39, SPIRTCHG to .40 and RLGDSCHG to .43. This showed that although the overall alpha was low, all of the variables were important to maintain even this alpha. Further, as will be seen, the correlation between any of the change variables was low showing that they were all measuring different elements of religious commitment.

Adding the two post measures, the change in religiousness/religiosity compared to the average person the respondent's age (CSSRAT20) and the change in religious beliefs and convictions compared to when the respondent first started college (SLFCHG07), increased the overall reliability coefficient alpha to .62. Deleting any of the six items decreased the alpha except for the discussion of religion. In that case the alpha remained virtually the same if the item was included or excluded. Because the reliability was not reduced by the inclusion of any of the six variables and in five of the six cases actually was increased, all were deemed important for the study.

The discussion above regarding the gross differences in pre-post measurements of the same variables is enlightening. All showed a decrease between the CIRP and the CSS measurements. Because the scales are different between the variables, comparing the means was viewed as not instructive other than the limited comparison of religious service/church attendance and religious discussion.

These overall decreases in the religiosity related measures discussed above still lead one to ask how much of this decreasing religious commitment was simply a reflection of the questioning and maturing process of late adolescence and early adulthood. This research project was intended to look at the differences by the affiliations of the colleges attended and the students' religious preferences. Even if much of the above decline is generally found in the population, the question of differences by college affiliation and student denomination is still appropriate. To assist in that investigation, one other variable was created, Religiosity Composite Change (RLGSCMP1 – sometimes referred to in this document as Religiosity Composite for brevity). It is the mean of all of the standardized change variables and was calculated for participants as a single indicator of change in religiosity. This composite variable is important in making more general statements regarding overall changes in religiosity over the college years. This religiosity composite variable will be utilized to compare across respondents, change variables, religious preferences and college affiliations. The correlation matrix of the change variables as well as the religiosity composite change variable is presented in Table 8.

As mentioned above, the correlation between any two of the change variables was low but positive showing that they were all measuring different elements of religious commitment. All correlations were statistically significant ($p < .001$). Overall the students' assessment of their change in religious beliefs and convictions has the highest correlation to their religiosity composite change followed by religious service/church attendance. Each individual's comparison to others their age appears to be more correlated to their overall religiosity composite than their self-assessment of change in spirituality, participation in prayer or meditation or religious discussions.

Table 8

Correlation Matrix for the Change and Composite Variables

Variable	ATTSVCHG	PRYMDCHG	SPIRTCHG	RLGDSCHG	CSSRAT20	SLFCHG07	RLGSCMP1
ATTSVCHG	1.00						
PRYMDCHG	.23	1.00					
SPIRTCHG	.18	.22	1.00				
RLGDSCHG	.19	.18	.17	1.00			
CSSRAT20	.23	.13	.25	.04	1.00		
SLFCHG07	.31	.20	.22	.15	.48	1.00	
RLGSCMP1	.61	.55	.58	.49	.60	.67	1.00

Note. All correlations are statistically significant ($p < .001$). The descriptions of the variables names are as follows: ATTSVCHG – Change in Religious Service/Church Attendance; PRYMDCHG – Change in Prayer/Mediation; SPIRTCHG – Change in Spirituality; RLGDSCHG – Change in Discussion of Religion; CSSRAT20 – Religiousness/Religiosity Compared to Average Person Your Age; SLFCHG07 – Change in Religious Beliefs and Convictions Compared to When You First Started College; and RLGSCMP1 – Religiosity Composite Change. The ranges of these variables were presented in Table 3.

Results for Research Questions

Question 1: Change in Religiosity Depending on Institutional Affiliation

The first research question asked if there were a significant difference in the change of religiosity during the undergraduate college career of students depending on the affiliation of the educational institution or institutions attended. The specific tests to answer this question included a one-way ANOVA with Tukey–HSD for the six change variables and the one composite variable as well as separate independent samples *t*-tests for CCCU and NACCAP membership.

Change in Religiosity by College Affiliation

The eleven institutional affiliations shown in Table 1 were utilized as the independent variables. The dependent variables included all of the six change variables as well as the religiosity composite change variable. Tables 9 through 15 present the ANOVA results for the first research question for each change variable by the independent variable college affiliation (SHAFFIL). The data for all tables are presented in order of the change in mean from the most negative to the most positive. Additionally, the identification of homogeneous subsets by the Tukey-HSD post-hoc tests is indicated by the sub-scripts of the means. Those with the same identifier were considered homogeneous. This method of noting homogeneous subsets was utilized throughout this study.

Table 9

ANOVA for Change in Religious Service/Church Attendance – ATTSVCHG

<u>College Affiliation</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Presbyterian	604	-.52 _a	.73		
Indep.-No Affil.	4288	-.49 _{ab}	.75		
Roman Catholic	4354	-.41 _{abc}	.70		
Indep.-Catholic	1634	-.39 _{bcd}	.73		
State	1346	-.37 _{cde}	.70		
Lutheran-Reform.	415	-.29 _{de}	.61		
Anabaptist	685	-.27 _e	.59		
Methodist-Naz.	379	-.14 _f	.49		
Other Protestant	447	-.11 _f	.43		
Indep.-Protestant	1190	-.11 _f	.46		
<u>Baptist</u>	<u>369</u>	<u>-.08_f</u>	<u>.44</u>		
Total	15711	-.38	.69	$F(10,15700) = 53.952$	
				$p < .001$	$\eta = .1823$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The results of this ANOVA show a statistically significant difference in the change in religious service/church attendance by the affiliation of the college attended. Using Cohen's guidelines (Pallant, 2001) for Eta squared (converted to Eta: .10 = small, .24 = moderate, .37 = large), the effect size was considered somewhat moderate. All affiliations showed a decrease in church attendance. Three distinct homogeneous groupings of affiliations were identified. Presbyterian, Independent–No Affiliation and Roman Catholic colleges made up the group with the largest negative change in religious service attendance. Independent–Catholic, State and Lutheran/Reformed colleges made up another distinct group with moderately negative changes in religious service attendance. Methodist/Nazarene, Other Protestant, Independent–Protestant and Baptist colleges made up another distinct group with smaller decreases in church attendance. Anabaptist functioned much like Public and Lutheran/Reformed colleges on this measure.

Table 10

ANOVA for Change in Prayer/Meditation – PRYMDCHG

<u>College Affiliation</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Lutheran-Reform.	402	-.26 _a	1.17		
Roman Catholic	4177	-.21 _a	1.19		
Indep.-No Affil.	4063	-.21 _a	1.17		
State	1294	-.19 _a	1.12		
Indep.-Catholic	1544	-.19 _a	1.15		
Methodist-Naz.	368	-.16 _{ab}	1.25		
Presbyterian	588	-.15 _{ab}	1.09		
Baptist	361	-.15 _{ab}	1.23		
Anabaptist	665	-.10 _{abc}	1.25		
Other Protestant	426	.04 _{bc}	1.30		
<u>Indep.-Protestant</u>	<u>1159</u>	<u>.08_c</u>	<u>1.26</u>		
Total	15047	-.17	1.18	$F(10,15036) = 7.717$	
				$p < .001$	$\eta = .0715$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The results of this ANOVA showed a significant difference in the change in prayer and meditation by the affiliation of the college attended. The effect size was considered very small using Cohen's standard (Pallant, 2001). The post-hoc tests identified three distinct homogeneous groupings of colleges. All college affiliations other than two showed a decline in prayer and meditation. Other Protestant and Independent

Protestant colleges showed small but still positive gains on this variable. Because of the small mean decline for Anabaptists (-.10), they were noted in the middle and part of all homogeneous subsets.

Table 11

ANOVA for Change in Spirituality – SPIRCHG

<u>College Affiliation</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Presbyterian	548	-.23 _a	1.04		
State	1334	-.15 _{ab}	1.03		
Anabaptist	683	-.15 _{ab}	.91		
Lutheran-Reform.	411	-.15 _{ab}	.96		
Roman Catholic	4295	-.12 _{ab}	1.00		
Indep.-No Affil.	4188	-.10 _{ab}	1.06		
Methodist-Naz.	378	-.09 _{ab}	.90		
Other Protestant	424	-.09 _{ab}	.85		
Indep.-Catholic	1617	-.08 _{ab}	1.00		
Baptist	367	-.07 _{ab}	.90		
<u>Indep.-Protestant</u>	<u>1167</u>	<u>.01_b</u>	<u>.90</u>		
Total	15412	-.11	1.00	$F(10,15401) = 3.223$	
				$p < .001$	$\eta = .0457$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The results of this ANOVA showed a significant difference in the change in spirituality by the affiliation of the college attended. The effect size was considered very

small using Cohen's standard (Pallant, 2001). The post-hoc tests yielded only two homogeneous subsets. These subsets were overlapping except for two affiliations, Presbyterian and Independent-Protestant. Presbyterian colleges showed the greatest decline of all colleges studied while Independent-Protestant institutions were the only college affiliation with an increase on this variable.

Table 12

ANOVA for Change in Discussion of Religion – RLGDSCHG

<u>College Affiliation</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
State	1164	-.10 _a	.71		
Indep.-No Affil.	4112	-.09 _a	.70		
Roman Catholic	4121	-.08 _a	.71		
Indep.-Catholic	1521	-.08 _a	.68		
Lutheran-Reform.	400	-.07 _a	.61		
Presbyterian	591	-.06 _a	.68		
Anabaptist	647	-.02 _{ab}	.61		
Methodist-Naz.	356	.01 _{ab}	.60		
Other Protestant	352	.01 _{ab}	.60		
Baptist	351	.02 _{ab}	.60		
<u>Indep.-Protestant</u>	<u>1128</u>	<u>.06_b</u>	<u>.59</u>		
Total	14743	-.06	.68	$F(10,14732) = 6.659$	
				$p < .001$	$\eta = .0671$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The results of this ANOVA showed a significant difference in the change in the discussion of religion. The effect size was considered very small using Cohen's standard (Pallant, 2001). The post-hoc tests identified two distinct homogeneous subsets. However, fewer affiliations overlapped versus what was found for the change in spirituality. Those with the most negative change were (in order from the most negative change) State, Independent–No Affiliation, Roman Catholic, Independent–Catholic and Lutheran/Reformed. These were identified as being significantly lower than Independent–Protestant colleges. Presbyterian, Methodist/Nazarene, Other Protestant and Baptist affiliated colleges were identified as members of both groups.

Table 13

ANOVA for Religiousness/Religiosity Compared to Average Person Your Age –CSSRAT20

<u>College Affiliation</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Indep.-No Affil.	4257	2.81 _a	1.13		
State	1351	2.83 _a	1.14		
Indep.-Catholic	1631	2.97 _{ab}	1.03		
Roman Catholic	4350	3.10 _{bc}	1.03		
Presbyterian	553	3.15 _c	1.07		
Lutheran-Reform.	414	3.41 _d	1.00		
Anabaptist	685	3.48 _d	.88		
Methodist-Naz.	381	3.54 _{de}	.93		
Other Protestant	429	3.67 _{ef}	.85		
Baptist	369	3.78 _f	.86		
<u>Indep.-Protestant</u>	<u>1177</u>	<u>3.79_f</u>	<u>.93</u>		
Total	15597	3.10	1.09	$F(10,15586) = 144.507$	
				$p < .001$	$\eta = .2913$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The results of this ANOVA showed a significant difference in the self-reported religiousness/religiosity compared to the average person the respondent's age by the affiliation of the college attended. The effect size was considered moderately large. The post-hoc tests identified six homogeneous subsets of affiliations with little overlap. Independent–No Affiliation, Public and Independent–Catholic were included in the only subset with means less than average (3). Catholic and Presbyterian were in a separate subset just above average. Lutheran and Reformed, Anabaptist, Methodist and Nazarene were all in fourth subset significantly different from the others and above the mean. Other Protestant, Baptist and Independent–Protestant were in the subset with the highest means.

Table 14

ANOVA for Change in Religious Belief and Convictions – SLFCHG07

<u>College Affiliation</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Indep.-No Affil.	4300	3.28 _a	.92		
State	1362	3.35 _{ab}	.87		
Indep.-Catholic	1639	3.42 _{abc}	.88		
Roman Catholic	4362	3.50 _{bc}	.92		
Presbyterian	589	3.55 _{cd}	.97		
Lutheran-Reform.	414	3.68 _d	.98		
Anabaptist	687	3.92 _e	.94		
Methodist-Naz.	382	4.04 _{ef}	.93		
Other Protestant	437	4.12 _{fg}	.79		
Indep.-Protestant	1187	4.19 _{fg}	.88		
<u>Baptist</u>	<u>367</u>	<u>4.21_g</u>	<u>.86</u>		
Total	15726	3.54	.96	$F(10,15715) = 168.191$	
				$p < .001$	$\eta = .3109$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The results of this ANOVA showed a significant difference in growth in religious beliefs and convictions by the affiliation of the college attended. The effect size was considered between moderate and large using Cohen's standard (Pallant, 2001) and was the largest of the variables tested. The post-hoc test for homogeneous subsets identified seven distinct groups with some overlap, especially at the lower and upper means.

Independent–No Affiliation, State and Independent–Catholic institutions were again distinct from other groups with Catholic nearly included in this grouping except for its non-similarity with Independent–No Affiliation colleges. Although Presbyterian overlapped with some of the members of the first two groups, it was identified as homogeneous with Lutheran and Reformed colleges. Other Protestant, Independent–Protestant and Baptist institutions again were a homogeneous group with the highest means.

Table 15

ANOVA for Religiosity Composite Change – RLGSCMP1

College Affiliation	N	Mean	S.D.	F-test/significance	Effect Size
Indep.-No Affil.	4338	-.13 _a	.60		
State	1366	-.09 _{ab}	.59		
Presbyterian	611	-.05 _{ab}	.63		
Indep.-Catholic	1653	-.04 _{ab}	.58		
Roman Catholic	4397	-.03 _b	.58		
Lutheran-Reform.	418	.07 _c	.57		
Anabaptist	689	.16 _{cd}	.56		
Methodist-Naz.	382	.24 _{de}	.53		
Other Protestant	451	.31 _{ef}	.50		
Baptist	371	.32 _{ef}	.49		
<u>Indep.-Protestant</u>	<u>1193</u>	<u>.37_f</u>	<u>.49</u>		
Total	15869	.00	.59	$F(10,15858) = 114.592$	
				$p < .001$	$\eta = .2596$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The composite measure of all six change variables converted to standard scales provides a final interesting summary ANOVA. This ANOVA showed a significant difference in the overall religiosity measure of the six change variables by college affiliation. The effect size was considered moderate using Cohen's standard (Pallant, 2001). The post-hoc tests provided a summary grouping of homogeneous affiliations.

Independent–No Affiliation, State, Presbyterian and Independent–Catholic Institutions were clearly a distinct subset of institutions. Except for dissimilarity with one affiliation, Independent–No Affiliation, it appeared that Catholic institutions would have been a part of this subset. These affiliations had negative means on the overall religiosity measure. All other affiliations showed positive overall means ranging from groups of Lutheran/Reformed and Anabaptist colleges with the smallest positive mean to a group of Other Protestant, Baptist and Independent–Protestant colleges with the largest positive means. Methodist and Nazarene institutions were distinct from but between both of these positive groups.

In summary of the ANOVA tests performed on this first research question, not surprisingly with the huge number of subjects in this study, all of the change variables showed a significant difference in religiosity measurement across the entire population for each change variable and the composite variable by affiliation of the college attended. Using the Tukey-HSD Post-Hoc test, some interesting groupings of college affiliations were found and discussed with the preceding tables. Table 16 presents a complete overview of each of the variables and the homogeneous subsets found significant. The items on this table are in order of the religiosity composite variable. Table 17 shows the ranking of each of the change variable means for each of the college affiliations. The items are in order of the average ranking on each of the change and self-reported variables. Because the religiosity composite change variable (RLGSCMP1) includes each standardized change variable, including it in the calculation of the average rank would not be appropriate.

Table 16

College Affiliation Homogeneous Relationships by Change Variable (ordered by RLGSCMP1)

Affiliation	ATTSVCHG	PRYM	SPI	RLG	CSSRAT20	SLFCHG07	RLGSCMP1
Indep-No	A B	A	A B	A	A	A	A
State	C D E	A	A B	A	A	A B	A B
Presby	A	A B	A	A	C	C D	A B
Indep-Cath	B C D	A	A B	A	A B	A B C	A B
Catholic	A B C	A	A B	A	B C	B C	B
Luth/Refrm	D E	A	A B	A	D	D	C
Anabaptist	E	A B C	A B	A B	D	E	C D
Meth/Nazar	F	A B	A B	A B	D E	E F	D E
Other Protes	F	B C	A B	A B	E F	F G	E F
Baptist	F	A B	A B	A B	F	G	E F
Indep-Protes	F	C	B	B	F	F G	F

Note. The abbreviations of the dependent variables are as follows: PRYM = PRYMDCHG, SPI = SPIRTCHG and RLG = RLGDSCHG.

Table 17

College Affiliation With Ranks (and Means) for Each Change Variable (ordered by average rank not including RLGSCMP1)

Affiliation	Avg Rank	ATTSVCHG	PRYMDCHG	SPIRCHG	RLGDSCHG	CSSRAT20	SLFCHG07	RLGSCMP1
Indep-No	2.5	2 (-.49)	3 (-.21)	6 (-.10)	2 (-.09)	1 (2.81)	1 (3.28)	1 (-.13)
State	2.7	5 (-.37)	4 (-.19)	2 (-.15)	1 (-.10)	2 (2.83)	2 (3.35)	2 (-.09)
Catholic	3.8	3 (-.41)	2 (-.21)	5 (-.12)	3 (-.08)	4 (3.10)	4 (3.50)	5 (-.03)
Presby	4.2	1 (-.52)	7 (-.15)	1 (-.23)	6 (-.06)	5 (3.15)	5 (3.55)	3 (-.05)
Indep-Cath	4.7	4 (-.39)	5 (-.19)	9 (-.08)	4 (-.08)	3 (2.97)	3 (3.42)	4 (-.04)
Luth/Refrm	4.7	6 (-.29)	1 (-.26)	4 (-.15)	5 (-.07)	6 (3.41)	6 (3.68)	6 (.07)
Anabaptist	6.7	7 (-.27)	9 (-.10)	3 (-.15)	7 (-.02)	7 (3.48)	7 (3.92)	7 (.16)
Meth/Nazar	7.5	8 (-.14)	6 (-.16)	7 (-.09)	8 (.01)	8 (3.54)	8 (4.04)	8 (.24)
Other Protes	9.0	9 (-.11)	10 (.04)	8 (-.09)	9 (.01)	9 (3.67)	9 (4.12)	9 (.31)
Baptist	10.0	11 (-.08)	8 (-.15)	10 (-.07)	10 (.02)	10 (3.78)	11 (4.21)	10 (.32)
Indep-Protes	10.7	10 (-.11)	11 (.08)	11 (.01)	11 (.06)	11 (3.79)	10 (4.19)	11 (.37)
All Students	NA	NA (-.38)	NA (-.17)	NA (-.11)	NA (-.06)	NA (3.10)	NA (3.54)	NA (.00)

On every variable shown in Table 16, there is a clustering of Independent–No Affiliation, State, Presbyterian, Independent–Catholic and Catholic colleges. These affiliations show the most consistent negative changes. Likewise, Methodist and Nazarene, Other Protestant, Baptist and Independent–Protestant colleges are consistently among those with the most positive changes. Anabaptists are frequently part of the more positive subsets.

Table 17 provides a summary of the relationship of college affiliation and the degree of change for each of the tested variables. The rank order of each college affiliation for the tested change and composite variables is shown with the actual mean in parentheses. Interestingly, only the rank order of Catholic affiliated colleges is different from the order of the religiosity composite change variable (RLGSCMP1). Further, there appears to be some natural grouping of college affiliations. Both the ranking method and the religiosity composite change variable show that subjects that attended Independent–No Affiliation and State colleges had the most negative change. Students who attended Catholic, Presbyterian and Independent–Catholic colleges showed consistent but modest drops in religiosity measures. Lutheran and Reformed, Anabaptist and Methodist and Nazarene affiliations showed modest increases. Students who attended Other Protestant, Baptist and Independent–Protestant colleges consistently showed the most positive changes on all variables.

Change in Religiosity by Membership in CCCU or NACCAP

Institutional membership in two organizations was utilized as an independent variable in addition to the college affiliation discussed above. As defined more fully earlier, these organizations were the Council for Christian Colleges and Universities

(CCCU) and the National Association of Christian College Admissions Professionals (NACCAP). As noted in Table 2, 2,880 respondents from 38 CCCU institutions were included in the data set. Likewise, the data set included 2,508 respondents from 34 NACCAP institutions.

Appendix A lists the CCCU and NACCAP institutions included in this data set. It was noted at the time of performing the analysis that there was much over-lap between the two groups. It was expected that the results should be similar. Table 18 provides the results of the independent samples *t*-test for testing if there is a significant difference in the change in religiosity depending on membership in CCCU from the balance of the study population.

Table 18

Change in Religiosity by CCCU Membership

<u>Membership</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>t-test/significance</u>	<u>Effect Size</u>
Change in Religious Service/Church Attendance					
No	12848	-.43	.73	$t(6900) = -29.53$	
Yes	2863	-.12	.44	$p < .001$	$d = -.44$
Change in Prayer/Meditation					
No	12270	-.20	1.17	$t(3967) = -6.66$	
Yes	2777	-.03	1.24	$p < .001$	$d = -.14$
Change in Spirituality					
No	12585	-.11	1.03	$t(4778) = -1.77$	
Yes	2827	-.08	.87	$p = .08$	$d = -.03$
Change in Discussion of Religion					
No	12084	-.08	.70	$t(4547) = -7.57$	
Yes	2659	.02	.58	$p < .001$	$d = -.14$
Religiousness/Religiosity Compared to Average Person Your Age					
No	12749	2.96	1.09	$t(5275) = -41.81$	
Yes	2848	3.73	.83	$p < .001$	$d = -.71$
Change in Religious Beliefs and Convictions					
No	12865	3.41	.92	$t(4507) = -42.40$	
Yes	2861	4.16	.85	$p < .001$	$d = -.79$
Overall Religiosity Composite Change					
No	12990	-.07	.59	$t(4910) = -36.10$	
Yes	2879	.31	.49	$p < .001$	$d = -.64$

The results of these *t*-tests indicate that there is a significant difference on all measures of change in religiosity except change in spirituality depending on whether the attended school is a member of CCCU or not. Students attending a CCCU school show a less negative or a more positive impact on measures of change in religiosity for all variables. Even the mean of non-CCCU schools for change in spirituality was lower than that of CCCU schools, however, the value of *p* was just a bit higher than the cut-off defined in this study's methodology (.05). On all other measures, the value of *p* is near zero and well below the cut-off point. Therefore, there is a significant difference in all religiosity measure except change in spirituality for CCCU schools compared to non-CCCU schools. Using Cohen's (as cited in Harris, 1998) guidelines for *d*-effect size (.2 = small, .5 = medium and .8 = large), it was noted that the effect size is medium to large for all variables except change in spirituality (very small), change in prayer/meditation (small) and change in discussion of religion (small).

It is noted that the students' overall assessment of their change in religiousness/religiosity and their change in religious beliefs and convictions both have the largest effect sizes reported by this *t*-test. Other measures of these variables have shown that students have been quite optimistic on these measures compared to the four change variables. Even though respondents attending non-CCCU schools still reported change at average or better on both measures, CCCU school respondents assessed themselves much higher.

Table 19 provides the results of the independent samples *t*-test for testing if there is a significant difference in the change in religiosity depending on membership in NACCAP from the balance of the study population.

Table 19

Change in Religiosity by NACCAP Membership

Membership	N	Mean	S.D.	<i>t</i> -test/significance	Effect Size
Change in Religious Service/Church Attendance					
No	13213	-.42	.72	<i>t</i> (5539) = -28.44	
Yes	2498	-.12	.43	<i>p</i> < .001	<i>d</i> = -.44
Change in Prayer/Meditation					
No	12627	-.19	1.17	<i>t</i> (3303) = -6.05	
Yes	2420	-.03	1.24	<i>p</i> < .001	<i>d</i> = -.14
Change in Spirituality					
No	12942	-.11	1.02	<i>t</i> (3923) = -2.47	
Yes	2470	-.07	.86	<i>p</i> = .01	<i>d</i> = -.05
Change in Discussion of Religion					
No	12379	-.08	.70	<i>t</i> (3820) = -7.52	
Yes	2364	.02	.58	<i>p</i> < .001	<i>d</i> = -.15
Religiousness/Religiosity Compared to Average Person Your Age					
No	13116	2.98	1.09	<i>t</i> (4226) = -39.29	
Yes	2481	3.74	.84	<i>p</i> < .001	<i>d</i> = -.70
Change in Religious Beliefs and Convictions					
No	13232	3.42	.93	<i>t</i> (3688) = -39.58	
Yes	2494	4.17	.85	<i>p</i> < .001	<i>d</i> = -.79
Overall Religiosity Composite Change					
No	13361	-.06	.59	<i>t</i> (3987) = -34.11	
Yes	2508	.32	.49	<i>p</i> < .001	<i>d</i> = -.64

The results for Table 19 show that there was a significant difference on all measures of change in religiosity depending on whether the school attended was a member of NACCAP or not. Although the overall results are very similar compared to those for CCCU membership presented in Table 18, respondents attending NACCAP membership schools provided enough of a difference to even have the change in spirituality to show significance. In all cases the direction of the change for the mean of all variables was always more positive for those respondents attending NACCAP member institutions. The p value was at or near zero on all variables except change in spirituality where it was reported at .01 still well under the .05 level of statistical significance.

Question 2: Change in Religiosity Depending on Student Religion/Denomination

The first research question asked if there were an overall difference in the change in religiosity by the affiliation of the college attended. The second question sought to explore the relationship of the student's religion and denomination to the overall change in religiosity over the college experience. The self-reported religious preference at the time of taking the CIRP was utilized as the independent variable. The overall religiosity composite change measure, RLGSCMP1, was the dependent variable. It is important to recognize that this variable is a composite mean of all standardized scale change measures. Table 20 presents the ANOVA results. The incoming student religions are presented in order of the religiosity composite change variable, from most negative to most positive.

Table 20

ANOVA for Religiosity Composite Change (RLGSCMP1) by Incoming Religion

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Episcopal	355	-.21 _a	.56		
Buddhist	105	-.19 _{ab}	.65		
Jewish	234	-.12 _{abc}	.61		
Quaker	48	-.10 _{abcd}	.71		
None	1713	-.08 _{abcde}	.57		
Roman Catholic	6190	-.06 _{abcde}	.58		
Eastern Orthodox	119	-.04 _{abcde}	.56		
Lutheran	618	-.04 _{abcde}	.60		
Church of Christ	241	-.02 _{abcde}	.55		
Mormon (LDS)	33	-.02 _{abcde}	.80		
Methodist	783	-.00 _{abcde}	.65		
Other Religion	464	.00 _{abcde}	.65		
Presbyterian	783	.02 _{abcde}	.62		
Seventh Day Adv.	21	.08 _{bcde}	.66		
Islamic	55	.09 _{cde}	.57		
Other Christian	2667	.17 _{de}	.56		
<u>Baptist</u>	<u>1140</u>	<u>.18_e</u>	<u>.58</u>		
Total	15569	.00	.59	$F(16,15858) = 32.255$	
				$p < .001$	$\eta = .1792$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

The ANOVA test shows that there is a significant difference in religiosity by the students' incoming religion. Different religions have clearly different degrees of religiosity change during the college experience. Episcopal, Buddhist and Jewish students decline the most in religiosity. Seventh Day Adventist, Islamic, Other Christian and Baptist increase the most by far. The post-hoc tests provided groupings of homogeneous affiliations. There appears to be quite a bit of similarity among most of the student religions with little change in religiosity. However, students who identified themselves as Episcopal, Buddhist and Jewish had the most significant negative change in religiosity and are especially different from students identified as Other Christian and Baptist. The effect size was considered between small and moderate using Cohen's standard (Pallant, 2001).

*Question 3: Change in Religiosity Depending on Student Religion/Denomination
and the Affiliation of the College Attended*

The first two research questions asked if there were an overall difference in religiosity by the affiliation of the college attended or students' religion and denomination. This question sought to put these together to determine if there were significant changes in religiosity by students' religion and the college's affiliation.

Change in Religiosity by College Affiliation and Student Religion

Tables presenting the change in religiosity for each college affiliation by the students' religion are included in Appendix G₁₋₁₃ listed in order of the religiosity composite, from most negative to most positive. Each college affiliation is presented by its own ANOVA. Table 21 and the first two columns of Table 22 summarize the data presented in Appendix G. Cells with less than five respondents were ignored.

Table 21

Religiosity Composite Change (RLGSCMP1) for Student Incoming Religion by College Affiliation (in order of All RLGSCMP1)

Student Religion	All	State	Indep No Affl	Indep Catholic	Indep Protstnt	Roman Catholic	Baptist	Presby	Anabap	Mthdst Nazarene	Lutheran Reform	Other Protstnt
Episcopal	-.21	-.26	-.23	-.39	.09	-.08	~	-.22	~	~	-.25	~
Buddhist	-.19	-.42	-.23	-.04	.65	-.10	~	-	~	-	~	-
Jewish	-.12	-.02	-.13	-.22	~	-.15	-	~	-	-	~	~
Quaker/Frn	-.10	~	-.19	~	~	-.31	~	-	.19	~	-	-
None	-.08	-.15	-.14	-.08	.33	.01	.21	-.04	.17	.11	.19	.63
R. Catholic	-.06	-.12	-.14	-.04	.28	-.04	.11	-.09	.04	-.27	-.20	.19
E. Orthodx	-.04	-.18	-.14	.08	~	-.02	-	~	~	-	~	-
Lutheran	-.04	-.16	-.15	-.08	.26	-.05	.43	-.26	.18	.27	.00	.17
Chur Christ	-.02	.01	-.27	-.06	.21	-.14	~	-.19	.10	.30	.01	.22
Mormon	-.02	-.35	-.09	~	~	~	-	~	~	-	-	~
Methodist	-.00	-.08	-.15	.01	.40	-.03	.31	.03	.17	.13	.22	.18

Table 21 – continued

Religiosity Composite Change (RLGSCMP1) for Student Incoming Religion by College Affiliation (in order of All RLGSCMP1)

Student Religion	All	State	Indep No Affl	Indep Catholic	Indep Protstnt	Roman Catholic	Baptist	Presby	Anabap	Mthdst Nazarene	Lutheran Reform	Other Protstnt
Oth Relign	.00	-.09	-.13	.03	.51	.02	.48	.05	-.03	.24	-.30	.23
Presbytrian	.02	.01	-.14	-.11	.40	-.02	.16	-.00	.17	.27	.18	.31
7 th Day Ad	.08	.34	~	~	~	-.34	–	~	–	~	–	~
Islamic	.09	~	-.08	.21	~	.21	–	~	~	~	–	–
Oth Christn	.17	.00	-.07	-.10	.36	-.03	.28	-.01	.18	.30	.19	.36
Baptist	.18	.01	.02	-.03	.43	.10	.38	-.03	.30	.17	.00	.21
Total	.00	-.09	-.13	-.05	.37	-.03	.33	-.05	.16	.23	.07	.31

Note. Dashes indicate that no responses were provided for that category. Responses marked with a tilde indicate fewer than 5 responses for that category.

The individual tables and the summary are revealing. Recalling from Table 15 that the mean religiosity composite change for the entire student population across all affiliations was zero, these tables show that there is quite a bit of variation by student religion by affiliation. This difference in religiosity was significant ($p < .05$) by incoming student religion at State (Appendix Table G₁), Independent – No Affiliation (Appendix Table G₂), Independent–Protestant (Appendix Table G₄), Anabaptist (Appendix Table G₈), Methodist and Nazarene (Appendix Table G₉) and Lutheran and Reformed (Appendix Table G₁₀) affiliated institutions. The difference in religiosity was not significant by incoming student religion at Independent–Catholic (Appendix Table G₃), Roman Catholic (Appendix Table G₅), Baptist (Appendix Table G₆), Presbyterian (Appendix Table G₇) and Other Protestant (Appendix Table G₁₁) affiliated institutions. As would be expected, groupings of similar affiliations yielded similar results. The difference in religiosity was significant by incoming student religion at combined State and Independent–No Affiliation (Appendix Table G₁₂) affiliated institutions. The difference in religiosity was not significant by incoming student religion at combined Independent–Catholic and Catholic (Appendix Table G₁₃) affiliated institutions.

The differences across affiliations for the different incoming student religious preferences are presented in Table 21. As these are in order of the religiosity composite change variable, those at either end of this scale warrant comment. Episcopal students appear to have larger declines in religiosity at all college affiliations except Independent–Protestant. Buddhist students have the largest declines at State institutions but the largest gains at Independent–Protestant. This appears to be a case where a change in religious affiliation may have sparked an increase in overall religiosity. As will be seen in a later

table, the number of religious preference possibilities reduced the number of incoming Buddhist respondents to too small of a cohort to track. Overall religiosity appears to be greatly increased for Presbyterian students at Independent–Protestant and Other Protestant affiliated institutions. Interestingly, Presbyterian students are the only group that actually declined below the overall mean for that group when attending institutions affiliated with that religion. Islamic students appear to show larger increases in religiosity at Catholic related institutions. Other Christian and Baptist students appear to have had the greatest increases in religiosity at Independent–Protestant affiliated institutions.

Change in Religiosity by College Membership in CCCU/NACCAP and Student Religion

The individual tables in Appendix H present the data for membership or non-membership in the CCCU or NACCAP by the students' religion in order of the religiosity composite, from most negative to most positive. Two ANOVA tables are provided for each membership organization with one for those who are not members and another for those who are members. The last four columns of Table 22 summarize the means by membership for each student religion presented by specific tables in Appendix H.

Table 22

Religiosity Composite Change (RLGSCMP1) for Student Incoming Religion by Combined

<u>College Affiliations or Memberships</u>						
Student Religion	State & Indep No	Catholic & Indep Cath	CCCU No	CCCU Yes	NACCAP No	NACCAP Yes
Baptist	.02	.06	.02	.39	.03	.40
Buddhist	-.33	-.07	-.19	~	-.19	~
E. Orthodox	-.15	-.00	-.09	.79	-.09	.79
Episcopal	-.23	-.17	-.22	.14	-.22	.12
Islamic	-.08	.21	.09	–	.09	–
Jewish	-.12	-.17	-.12	–	-.12	–
Mormon	-.20	.15	.01	~	.03	~
Lutheran	-.15	-.06	-.10	.31	-.10	.33
Methodist	-.14	-.02	-.07	.32	-.06	.33
Presbyterian	-.11	-.05	-.07	.36	-.06	.36
Quaker/Frnds	-.24	-.31	-.27	.26	-.27	.26
Rm. Catholic	-.14	-.04	-.06	.19	-.06	.28
7 th Day Adv	.11	-.14	-.01	~	.02	~
Chur. Christ	-.18	-.12	-.11	.23	-.05	.18
Oth Christian	-.05	-.05	-.03	.30	.03	.30
Oth Religion	-.12	.02	-.07	.21	-.05	.22
None	-.14	-.03	-.10	.46	-.09	.41
Total	-.12	-.04	-.07	.31	-.06	.32

Note. Dashes indicate that no responses were provided for that category. Responses marked with a tilde indicate fewer than 5 responses for that category.

In summary for question three, there does appear to be a significant difference by college affiliation and/or membership in CCCU and NACCAP in the change in religiosity across the college years. Further, there do appear to be significant differences in the change in religiosity by the student's religious preference depending on the affiliation of the college attended. More specifically, Table 21 shows in one place the change in religiosity that was experienced for those respondents of a particular incoming student religion across all of the college affiliations. Those with “~” indicate sample sets with fewer than five students. These were ignored in any discussion of overall means. Overall, students of all religious preferences who attended State and Independent–No Affiliation institutions reported consistently negative changes in overall religiosity. The only exceptions were Church of Christ, Presbyterian, Seventh Day Adventist, Other Christian and Baptist respondents at State institutions and Baptist respondents at Independent–No Affiliation institutions. Students of all religious preferences reported consistently positive changes in religiosity when attending Independent–Protestant, Baptist and Other Protestant institutions.

The findings presented in Table 22 are consistent. The first two columns provide information for combined affiliations of institutions that appeared to have similar change patterns. Appendix Tables G₁₂ and G₁₃ provide the increased detail used to create these columns. It is noted that the change in religiosity for combined State and Independent No Affiliation institutions was significant ($p < .05$), while that for combined Catholic and Independent–Catholic was not. This is similar to the individual affiliation's significance shown for State and Independent–No Affiliation as well as for Catholic and Independent–Catholic as discussed above and detailed in Appendix G. Additionally, Table 22 shows

quite clearly that there are significant differences in the change in religiosity for students attending CCCU or NACCAP member institutions versus those who do not attend these institutions. In all cases where there were enough students to legitimize a comparison, all religions showed a more positive change in religiosity when attending CCCU and NACCAP member institutions versus non-affiliated counter-parts.

Question 4: Change in Student Religion by Affiliation of Institution Attended

The first two research questions asked if there were an overall difference in religiosity by the affiliation of the college attended or the students' religion and denomination. The third question combined the two to determine if there were significant changes in religiosity by the students' religion and their college affiliation. This last question recognizes the differences in religiosity shown in the first three questions and asks if individual religious identification had changed. Comparing the results of question three to this question will be important to determine if any part of the changes that have been reported were associated with a change in religious identification.

As discussed in the methodology section, recoding of one CSS religion (Other Far Eastern Religion) was required to match the category used in the CIRP (Other Religion). With that correction, a comparison by Crosstabs was prepared of the CIRP religious preference compared to that of the CSS. This is presented in Table 23. The data were analyzed for correlation and significance using Chi-Square to see if there are significant changes that occurred in religious identification over the college years. Religious adherence was defined as maintaining the same religious preference on the CSS measurement as was reported on the CIRP.

Table 23

Student Incoming Religious Preference (SIFRELIG) by CSS Religious Preference (Row %) – All Affiliations, All Records

Religion	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-Baptist	1125	71.4	~	~	0.4				~	2.2	3.0	~	1.4	~	~	14.3	1.9	4.2
2-Buddhist	104	~	63.5				~				~		~		~	4.8	4.8	19.2
3-E Orthdx	118	~		81.4									1.7			7.6	~	7.6
4-Episcopal	351	~	~		73.5					~	1.4		2.6			4.6	5.7	10.5
5-Islamic	53					84.9	~										~	9.4
6-Jewish	229					~	88.6		~				~			~	2.2	7.0
7-Mormon	32	~						59.4								~		28.1
8-Lutheran	609	1.3	~				~		79.1	~	0.8		1.3			5.9	2.1	8.2
9-Methodst	775	1.7	~	~	~		~		~	74.3	2.1	~	0.6		~	7.4	2.6	9.3
10-Prsbytrn	771	2.7	~	~	1.0			~	~	1.9	68.9		1.4		~	13.2	1.6	8.0
11-Quaker	47						~					34.0	27.7			23.4	~	~
12-Catholic	6129	0.1	0.3	~	0.1	~	0.1		0.1	0.1	0.2	0.1	88.8		~	1.6	1.2	7.2
13-7th Day	20		~										25.0	65.0		~		
14-Ch Chs	236	3.0			~				~	2.5	2.1		3.8		51.7	23.3	3.0	8.9
15-Oth Chs	2632	5.7	0.3	0.5	0.6	~	~	~	0.6	1.7	2.9	0.2	4.0	~	1.5	70.1	5.4	6.2
16-Oth Rlg	459	2.6	1.1	~	~	~	~		~	1.7	1.7	~	5.4		1.3	26.4	39.4	18.1
17-None	1682	1.3	1.9	~	0.7	~	0.8	~	1.1	1.2	1.8	0.5	5.6	~	~	5.7	6.5	71.9
Total Resp	15372	1050	142	123	313	53	230	24	535	710	725	42	5746	19	180	2614	613	2253

Note. $\chi^2(256, N = 15372) = 119669.92, p < .001$. Responses marked with a tilde indicate fewer than 5 responses for that category.

From Table 23, it is apparent that the change in religious identification is significantly different by religion. In general, there does appear to be a typical long-term adherence to the respondent's religion throughout the college experience. However, as can be seen on the diagonal of Table 23, these range from a highest adherence rate of 88.8% for Catholic to the lowest of 34.0% for Quaker. Those with the highest rates of adherence are as follows in declining order of adherence: Catholic (88.8%), Jewish (88.6%), Islamic (84.9%), Eastern Orthodox (81.4%), Lutheran (79.1%) and Methodist (74.3%). Of particular interest are those with an adherence rate below sixty percent. These are as follows in declining order of adherence rate: Mormon (59.4%), Church of Christ (51.7%), Other Religions (39.4%) and Quaker (34%).

To identify if there were significant changes in religious identification by the affiliation of the college attended, a new variable (RELCHANG) was created to indicate if the student's CSS religious preference were different from that stated on the CIRP. This variable was used to select those who indicated a change in religious preference from the preference provided on the CIRP for analysis by Crosstabs. These findings are presented in Table 24.

Table 24

Change in Student Religion by College Affiliation for those respondents who changed religious preference (% of those attending)

Student Religion	State	Indep No Affl	Indep Catholic	Indep Protstnt	Roman Catholic	Baptist	Presby	Anabap	Mthdst Nazarene	Lutheran Reform	Other Protstnt
Baptist	23.0	32.5	28.6	32.7	28.4	17.5	28.4	31.8	37.2	26.9	29.3
Buddhist	23.3	48.3	26.3	~	38.9	~		~		~	
E Orthdx	~	14.7	~		19.6		~	~			
Episcopal	31.6	26.6	25.0	46.7	17.3	~	21.8	~	~	~	
Islamic		~	~		~			~	~		
Jewish	~	8.2	~		31.6		~				
Mormon	~	41.7		~	~			~			
Lutheran	13.8	17.8	19.5	35.5	19.2	44.8	~	42.9	~	15.2	~
Methodst	20.8	24.7	34.6	23.5	23.8	~	17.4	34.1	39.4	33.3	50.0
Prsbytrn	33.3	22.3	22.4	42.6	28.9	55.6	21.5	52.2	72.7	51.5	50.0
Quaker	~	~	~	~	100.0	~		~	~		

Table 24 – continued

Change in Student Religion by College Affiliation for those respondents who changed religious preference (% of those attending)

Student Religion	State	Indep No Affl	Indep Catholic	Indep Protstnt	Roman Catholic	Baptist	Presby	Anabap	Mthdst Nazarene	Lutheran Reform	Other Protstnt
Catholic	16.7	14.6	10.0	26.7	9.1		14.4	~	~	9.3	~
7 th Day	~		~		~						
Ch Chrs	44.8	36.1	~	75.8	33.3	~	60.0	46.2	83.3	~	50.0
Oth Chrs	38.9	47.4	48.8	21.1	48.0	37.0	43.6	20.8	20.9	13.6	19.4
Oth Relig	60.4	47.6	59.4	91.7	48.2	100.0	33.3	79.5	82.6	71.4	87.0
None	22.9	24.8	25.8	53.5	31.7	83.3	30.8	41.2	46.2	58.3	50.0
Totl % Chg	25.1	24.0	17.4	30.2	15.6	31.1	24.3	29.7	33.6	21.5	27.6
Totl # Chg	333	1014	281	357	678	114	148	203	125	89	124
Total Rspd	1326	4223	1617	1182	4349	367	609	684	372	413	450

Note. Responses marked with a tilde indicate fewer than 5 responses for that category.

Because Table 24 is just reporting descriptive data, no degree of significance is indicated. Other Crosstabs with Chi-Square tests of significance, with results too voluminous to display here, showed what appeared to be a significant difference ($p < .001$) in the degree of adherence across all college affiliations. However, the number of empty cells in the analysis caused the tests to be regarded with suspicion. Therefore, Table 24 was created to just show the percentage of non-adherence to the CIRP religion without discussing what religion was reported on the CSS for non-adherers. Simply, the percentages shown are the respondents who changed from their CIRP-reported religion.

Overall, from the descriptive statistics and counts from the Crosstab used for this question, the change rate for all religious identifications across all affiliations of colleges attended was 22.5%. This was determined by adding all respondents that had changed religions (3,466) and dividing by the total number of valid student records that had both a CIRP and a CSS religious preference (15,592-220). The 220 students subtracted in the forgoing calculation failed to indicate a religious preference for either the CIRP or the CSS or for both. Those college affiliations with change percentages above the mean included (in order of change) Methodist and Nazarene (33.6%), Baptist (31.1%), Independent-Protestant (30.2%), State (25.1%), Presbyterian (24.3%) and Independent-No Affiliation (24.0%). Roman Catholic had the lowest change rate at 15.6% followed closely by Independent-Catholic (17.4%).

Table 25 shows even more clearly the impact of college affiliation and membership on the change in religious preference. The institution's membership in CCCU or NACCAP was used to define the groups in this table.

Table 25

Change in Student Religion by College Membership for those who changed religion (%)

Student Religion	CCCU	CCCU	NACCAP	NACCAP
	No	Yes	No	Yes
Baptist	29.5	26.6	29.7	26.2
Buddhist	34.3	~	34.3	~
E. Orthodox	17.7	~	17.7	~
Episcopal	25.0	53.8	24.9	58.3
Islamic	14.5		14.5	
Jewish	11.1		11.1	
Mormon	40.0	~	38.7	~
Lutheran	17.5	38.5	17.5	39.1
Methodist	24.6	29.2	24.5	30.2
Presbyterian	25.7	49.7	25.9	51.0
Quaker/Frnds	62.5	68.8	62.5	68.8
Rm. Catholic	11.1	9.6	11.1	10.0
7 th Day Adv	36.8		35.0	
Chur. Christ	43.0	59.7	44.8	64.5
Oth Christian	42.2	21.4	38.8	21.2
Oth Religion	50.7	87.7	53.8	86.0
None	26.2	73.9	26.5	73.0
Total % Change	20.6	29.4	21.0	29.0
Total Respondents	12736	2856	13105	2487

Note. Dashes indicate that no responses were provided for that category. Responses marked with a tilde indicate fewer than 5 responses for that category.

As has been noted in other comparisons, CCCU and NACCAP categories have nearly identical patterns. However, it is interesting that the degree of change in religious preference is quite different for non-CCCU versus CCCU and non-NACCAP versus NACCAP schools compared to other affiliations. Students attending CCCU and NACCAP related schools have a much higher percentage of change than their counterparts at non-CCCU and non-NACCAP schools. Investigating further the CCCU membership respondents shows an 87.7% change rate among the respondents whose CIRP religious preference was Other Religion and 73.9% for those with no religious preference. For both of these choices, the biggest change was to Other Christian. In fact, 63.2% of those who chose Other Religion and 42.2% of those who chose None on the CIRP, indicated Other Christian on the CSS. Attending a CCCU or NACCAP institution appears to assist in clarifying one's religious preference toward a particular Protestant denomination.

In summary, the analyses performed provide some solid answers for each of the research questions based on the responses of students taking the CIRP at the beginning and the CSS toward the end of their undergraduate careers. By utilizing these responses to measure the change in religious service/church attendance, prayer and meditation, religious discussion, self-measurement of spirituality, comparisons to other persons of similar age and change in religious beliefs and convictions, some conclusions can be drawn. These will be discussed more completely in the final chapter. In general, there does appear to be a significant difference in the overall change in religiosity depending on the affiliation of the college attended, the stated religion or denomination of the incoming student as well as when these variables are combined. Further, there does

appear to be a difference in the magnitude of change in religious preference depending on the affiliation of the college attended. It was also shown that there are significant differences in the degree of change based on whether one attended a CCCU or NACCAP affiliated college or not. These and other points will be discussed more completely in the concluding remarks.

CHAPTER FIVE: SUMMARY AND DISCUSSION

To assist the reader in understanding the full scope of this study, this chapter begins with a restatement of the purpose and reviews the methodology used to answer the research questions. The bulk of the chapter summarizes the results and discusses their implications. The most critical terms were defined in the first chapter including college affiliation and religiosity. College affiliation was intentionally a more specific determination than college type to include the college's control, religious connection or commitment. Eleven affiliations were utilized for the colleges included in the study. The college's membership in the Council for Christian Colleges and Universities (CCCU) or the National Association of Christian College Admissions Personnel (NACCAP) was used also as an institutional variable. Religiosity was defined as a compound term including identification with a particular religion as well as the degree of practice of its worship and tenets. Seventeen student religious preferences were also utilized.

Project Purpose and Research Questions

The purpose of this study was to investigate the relationship of a student's religion or denomination and the affiliation of the college attended with the degree of change in religiosity over the college years. It was the intent of this study to research more completely than previous studies the impact of the affiliation of the college attended on student religiosity for students of all religious preferences as specified at the start of the collegiate experience. This study went beyond the level of previous work because it not only re-explored research based on the type of college attended but also added the specificity of the religion and denomination of the student as well as the college, if applicable.

The research questions for this study were as follows:

1. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the affiliation of the educational institution attended?
2. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the stated religion or denomination of the incoming student?
3. Is there a significant difference in the change of religiosity during the undergraduate college career of students depending on the stated religion or denomination of the incoming student as well as the affiliation of the educational institution attended?
4. Is there a significant difference between the college student's incoming religion or denomination with that of the student's religion or denomination at the end of the undergraduate college career and the affiliation of the educational institution attended?

Review of Methodology

In brief, the methodology used in this study was a multi-step process. Utilizing the 2002 College Student Survey (CSS) results from the Higher Education Research Institute of the University of California, Los Angeles, 15,895 students from 133 four-year United States colleges were identified as meeting the selection criteria. Any included student had to have a corresponding Cooperative Institutional Research Program (CIRP) record from at least the third prior year and have been enrolled as a full-time undergraduate at a college with a known affiliation when the CSS was taken. Testing of

appropriate null hypotheses of no significant difference ($p < .05$) was accomplished for each of the research questions. The records were analyzed through Analysis of Variance (ANOVA), independent samples t -test and Cross-Tabs with Chi-Square tests of Significance where appropriate for the degree of change in religiosity measures by the college affiliation as well as the student's religious preference. College affiliations and memberships (CCCU or NACCAP) as well as the students' religious preferences were the independent variables. The dependent variables included six direct and one composite measure. Four specific pre-post measures of religiosity were utilized: change in religious service/church attendance, change in prayer/meditation, change in discussion of religion and change in spirituality. Two student post-measures were also utilized: religiousness/religiosity compared to the average person your age and change in religious beliefs and convictions compared to when you first started college. Additionally, the mean of the standardized scores for each of the above six variables was utilized as a composite measure of the change in religiosity.

Summary of Results and Discussion of Findings

The specific and detailed results are reported in the previous chapter. In summary, the seven measures were found to be not highly correlated to each other as they appeared to measure different aspects of the total change in religiosity. The students' self-measure of their own change in religious beliefs and convictions compared to when they first started college had the highest correlation to overall change in religiosity followed by the change in attendance at religious services or church. These were followed quite closely by the students' comparison of their religiousness/religiosity to the average person their age, the change in spirituality, and the change in prayer and meditation. The change in the

discussion of religion had the lowest correlation to the overall measure of change in religiosity.

Overall measures of religiosity deserve some comment. Across all respondents, the means dropped for all change variables. As noted above, the change variables included change in religious service/church attendance (ATTSVCHG), change in prayer/meditation (PRYMDCHG), change in discussion of religion (RLGDSCHG) and change in spirituality (SPIRTCHG). Both single religiosity measures from the CSS that were included in the composite variable showed actual increases. For the measure religiousness/religiosity compared to the average person the respondent's age (CSSRAT20), students viewed themselves as slightly above the average. For the measure change in religious beliefs and convictions compared to when the person first started college (SLFCHG07), the respondents viewed themselves leaning toward stronger. As was noted earlier, it is interesting that the respondents' views of themselves are quite different from the pre-post measures of their self-reported religion-related activities. This will be an important consideration in comparing with recent research.

An important point must be raised here that will be discussed in the limitations of this study. As shown in Table 1, the two largest affiliations were Independent–No Affiliation (4,347 respondents) and Roman Catholic (4,407 respondents). With these two groups representing over 50% of the respondents in the study, the means expressed for students attending these affiliations has a dramatic impact on the overall mean reported for all respondents. That is one of the main reasons why it is so important that the findings of this study are interpreted by the affiliation of the college attended and not as a holistic view of all students attending college.

Question 1: Change in Religiosity Depending on Institutional Affiliation

Based on the results obtained for ANOVA and *t*-tests, there did appear to be a significant difference in the change in religiosity by the affiliation and membership of the college attended for all six change variables as well as the religiosity composite change variable. The only exception was for CCCU membership for the change in spirituality variable. Because the reported probability ($p = .08$) was close to the chosen alpha ($p < .05$) and the difference of members versus non-members was consistent with all other measures, this exception was not especially important. Tables 17, 18 and 19 provide an overview of the results for this question. The next few paragraphs provide comments on the more specific results for each study variable.

Students across all college affiliations reported a decline in religious service/church attendance. There does appear to be a drop in religious service attendance during the college years no matter what the attended college affiliation. The standard deviation of this variable is among the smallest showing that the mean seems to be a more exact measure of the typical change across all respondents. Contrary to what was expected, it was interesting that respondents from state affiliated institutions dropped at about the mean of all respondents instead of at the lower end of means by institutional affiliation. It was possible that the preponderance of those attending state affiliated colleges indicated no church attendance on the CIRP and the same on the CSS with a zero net change. This could be possibly an issue for any affiliation. As no frequencies or other descriptive statistics by affiliation were prepared for these variables, this may remain an item for speculation and further study. Clearly, respondents from Presbyterian, Independent–No Affiliation, Roman Catholic, and Independent–Catholic dropped well

below the mean. Although respondents from Baptist, Independent-Protestant institutions, Other Protestant and Methodist-Nazarene affiliated institutions still dropped, the drops were considerably smaller than the mean of all respondents.

For the change in prayer and meditation, although the mean across all affiliations was negative, respondents from two affiliations, Other Protestants and Independent-Protestant, showed increases in this measure. At the other end of the change spectrum, respondents showed the largest decreases in this variable at Lutheran-Reformed, Roman Catholic, Independent-No Affiliation, State and Independent-Catholic affiliated institutions (in order from the most negative change in the mean). It is worth noting that this one measure had the largest standard deviation of all change variables. This is at least partially because this one variable had the widest scale of all the change variables as shown in Table 3. Therefore, this larger standard deviation was not necessarily an indication of a more platykurtic distribution. Again, contrary to what was expected, respondents from State affiliated institutions had declines at about the mean of the entire population.

The reported change in spirituality compared to other persons the respondents' age also yielded some interesting results. Only those attending Independent-Protestant affiliated colleges showed positive change on this variable. Those attending Presbyterian colleges dropped over two times the mean decline on this variable. In fact, as far as the Independent-Protestants were above the mean, the Presbyterians were below the mean.

The changes in the discussion of religion showed the largest drops in those attending State, Independent-No Affiliation and both Catholic related affiliations. Again, the largest increases were experienced at Independent-Protestant and Baptist affiliated

institutions. It does make some sense that those institutions that seem to be more overt in the integration of faith into all aspects of the college environment would foster an environment where the discussion of religion is more common-place.

When respondents compared their religiousness/religiosity to the average person their age, students attending Independent–No Affiliation, State and Independent–Catholic affiliated institutions viewed themselves as below average. While others viewed themselves average or slightly above, students attending Independent–Protestant, Baptist and Other Protestant affiliated institutions view themselves much more positively. Interestingly, those attending State affiliated institutions had the largest standard deviation indicating that while there were those who viewed themselves as above the mean for students their age, the bulk of these students viewed themselves as quite far below the mean. Again, because the largest group attended Roman Catholic affiliated institutions and viewed themselves as slightly above the mean, it is apparent that the overall measures may be skewed, in this case to the positive.

The reported change in religious beliefs and convictions compared to when the respondent first started college has some of the more interesting results. This variable is the only one in the study where every affiliation's mean showed a positive change, however minuscule, as reported for respondents from Independent–No Affiliation and State affiliated institutions. Respondents indicating their religious beliefs and convictions as clearly stronger were from (in order of mean from the highest) Baptist, Independent–Protestant, Other Protestant and Methodist-Nazarene affiliated institutions.

The overall measure of religiosity provides a clear composite measure of the individual variables discussed above. The most negative changes in overall religiosity

seem to have occurred for those respondents attending (in order from the most negative mean) Independent–No Affiliation, State, Presbyterian and both Catholic related affiliations. The most positive changes in the overall measure seem to have occurred for those respondents attending (in order from the most positive) Independent–Protestant, Baptist and Other Protestant affiliated institutions.

In general, the specific results provided in the findings section paint a consistent picture of the impact on religiosity change variables by the affiliation of the college attended. On every variable shown in Tables 16 and 17, there was a distinct clustering of Independent–No Affiliation, State, Catholic, Presbyterian and Independent–Catholic as the affiliations having the most consistent negative changes across all variables being measured. On some measures, Lutheran and Reformed affiliated institutions were also among those showing the most negative change. In fact, on the two most direct measures of religious action, two rather unexpected affiliations showed the greatest decreases. Respondents from Presbyterian affiliated institutions showed the greatest decline in church attendance across all affiliations while Lutheran and Reformed showed the greatest decline in the time spent in prayer and meditation.

Likewise, Methodist and Nazarene, Other Protestant, Baptist and Independent–Protestant colleges were consistently among those with the most positive changes. Anabaptists were frequently part of the more positive subsets. Many non-denominationally affiliated institutions are included in the Independent-Protestant group. It is interesting that on all measures except one, respondents from Baptist and Independent-Protestant affiliated institutions reported the two most positive changes in

measures of religiosity. Only for change in prayer and meditation did Baptists not have a mean among the two most positive.

Further, for CCCU and NACCAP related institutions, the comparisons to those attending non-CCCU and non-NACCAP related institutions were dramatic. The results of the independent samples *t*-tests performed for membership or non-membership in these organizations are included in Tables 18 and 19. In general, as indicated in the findings section, membership in these organizations provided similar results. In all cases, except one, there was a significant difference between members and non-members on all religiosity measures. The only exception was for the change in spirituality for CCCU membership. Although there was a clear difference between members and non-members, the alpha level was .03 above the stated cut-off for this study ($p < .05$). In all cases, however, the measurement of all study variables would place students attending CCCU member institutions similar to the top three most positively measured affiliations. In other words, if CCCU membership would have been an affiliation, it would have always been among the top three affiliations for all variables in this study. The same is true for students attending NACCAP member institutions. Further, as discussed in the methodology section, even the one non-significant measure of spirituality for CCCU membership was found to be significant for NACCAP membership. Interestingly, on this one variable, the mean for respondents from NACCAP member institutions was only .01 higher than that of respondents from CCCU member institutions. That small increase was enough to make the results significant compared to non-NACCAP member institutions.

Question 2: Change in Religiosity Depending on Student Religion/Denomination

Based on an ANOVA for student religious preference and religiosity composite change, there did appear to be a significant difference in the overall change in religiosity by student religious preference. The results for this question are contained in Table 20. Without regard to the affiliation of the college attended, respondents reported the most negative changes for those indicating their incoming religious preference as Episcopal, Buddhist, Jewish, Quaker, None, Roman Catholic, Eastern Orthodox and Lutheran in order from the most negative mean. Students indicating Church of Christ, Mormon, Methodist, Other Religion and Presbyterian reported overall changes at or near the mean. At the same time, those indicating the most positive change were Baptists, Other Christians, Islamic and Seventh Day Adventists (in order from the most positive). Recalling that the religiosity composite change variable was the mean of the standardized change related variables, one must remember that the means of the four actual change variables were all negative with only two self-reported measures being positive. This means that having an overall religiosity composite change of zero most likely indicates a decline in overall religiosity.

*Question 3: Change in Religiosity Depending on Student Religion/Denomination
and the Affiliation of the College Attended*

Individual ANOVAs were prepared for change in religiosity for each of the 17 student religious preferences across each of the 11 college affiliations. There did appear to be a significant difference in the change in religiosity by student religious preference for most college affiliations and memberships. The exceptions were Independent-

Catholic, Roman Catholic, Baptist, Presbyterian and Other Protestant affiliations. The summary of the results for this question is contained in Tables 21 and 22.

As detailed in the findings chapter and the corresponding appendices some interesting patterns for change in religiosity could be seen. The results showed that Baptists seem to have had the greatest increase in religiosity at Independent–Protestant affiliated institutions and the greatest decrease at Independent–Catholic and Presbyterian affiliated institutions. Presbyterian students experienced the greatest increase in religiosity also at Independent–Protestant institutions and the greatest decrease at Independent–No Affiliation institutions. In fact, students of most religions reported the greatest increase in religiosity when attending Independent–Protestant institutions where there were five or greater attendees of that religion in the sample for that affiliation. For the exceptions, Eastern Orthodox students showed the greatest increase in religiosity at Independent–Catholic institutions; Islamic students at Independent–Catholic or Catholic institutions; Lutheran and Church of Christ students at Methodist and Nazarene institutions; Quakers at Anabaptist institutions; Seventh Day Adventists at State institutions, and those with no religion at Other Protestant institutions. Overall, students who attended Independent–Protestant institutions showed the largest positive mean change in religiosity.

Independent–No Affiliation and State institutions had the most consistent negative religiosity composite measures across student religions. The exceptions were Baptist, Episcopal and Jewish students attending Independent–Catholic or Presbyterian institutions, Baptist and Lutheran students attending Presbyterian institutions, Quaker and Seventh Day Adventist students attending Roman Catholic institutions, Catholic students

attending Methodist or Nazarene institutions and Other religions attending Lutheran or Reformed institutions.

Table 22 showed that there are significant differences in the change in religiosity for students attending CCCU or NACCAP member institutions. As was shown in the findings chapter, all religions showed a more positive change in religiosity when attending CCCU and NACCAP affiliated institutions versus non-affiliated counter-parts. It should be noted that those with views divergent from the religious practices expected at Protestant institutions appear to not enroll at CCCU or NACCAP institutions. For example, there were too few Buddhists or Mormons to measure. Further, no students indicating an Islamic or Jewish religious preference were included in the sample set of those attending CCCU or NACCAP institutions.

Question 4: Change in Student Religion by Affiliation of Institution Attended

The tests performed showed that there appeared to be a significant difference in the adherence to the CIRP religious preference by the students' religion. To test if this difference were different by the affiliation of the college attended, Cross-tabs were prepared for a variable that indicated whether the student's religious preference had changed on the CSS from that indicated on the CIRP. Even though there does appear to be an overall mean change rate of 22.5% across religious preferences (a 77.5% average adherence rate), it was difficult to measure the significance of change in religious identification by the student's religious preference across the different college affiliations. Although Chi-Square tests of significance were attempted, too many empty cells were obtained to give conclusive results. However, the change rate varied across college affiliations from a low of 15.6% for students attending Roman Catholic

institutions to a high of 33.6% for those attending Anabaptist institutions. Tables 24 and 25 summarize the results for all college affiliations and memberships. Simply, many religions did not have any participants or adherents at many of the college affiliations.

Interestingly, as presented in Table 23, respondents from typically Protestant faiths all had less than an 80% adherence rate. It is possibly an area of discussion as to whether the top adherence-rated religions could be so as a matter of heritage, rather than choice and current participation. Possibly, individuals may still call themselves of a particular religious heritage, even though they may not be truly a practicing participant. For example, as shown in Table 21, the overall religiosity change for Roman Catholic respondents was a drop of .06 across all institutional affiliations. As was stated earlier, although this religious preference had the highest adherence, the drop in religiosity may be showing a heritage commitment to Catholicism rather than the practice of the Catholic religion. It seems likely that similar conclusions could probably be made across most religions. There are probably those in all religions who claim a particular religion but do not actively practice it. Studying this discrepancy may be of interest in the future.

Interpretation of Findings

In general, this study has shown that the affiliation of the college attended does appear to make a difference in the overall change in religiosity across all six change variables and the composite variable as well as adherence to the student's incoming religious preference. Based on the results of this study, students who choose to attend Independent–No Affiliation, State, Presbyterian and both categories of Catholic affiliated institutions appear to experience the largest declines in overall religiosity. Although the

order of affiliations from the most negative to the most positive for each of the six change variables does vary, overall, this listing approximates the order from the most negative.

On the other hand, those attending Other Protestant, Baptist, and Independent–Protestant affiliated institutions report the largest increases in overall religiosity. Consistently, respondents from these three affiliations reported the most positive changes on nearly all religiosity measures. Likewise, students who attend CCCU or NACCAP related institutions showed significant positive differences on almost all individual measures of religiosity as well as overall change in religiosity compared to those who attended non-member institutions. These positive differences were comparable to those experienced by students at the three consistently most positive affiliations (Other Protestant, Baptist and Independent–Protestant affiliated institutions).

The drop in religious service attendance was by far the greatest negative change for the population studied. Of the four actual pre-post change variables, its decline was over twice that of the next closest negative measure, change in prayer and meditation and over six times more negative than the change in religious discussion. Interestingly, although the comparable mean is much smaller, the scale for the change in prayer and meditation is nearly twice as wide as that for the change in attendance. Despite this difference, the drop in religious service/church attendance is much larger than other measures.

An interesting finding was that the self-measurement of the change in religious beliefs and convictions is contrary to the measures of change in religious practices. Although students provided a more positive view of their religiosity, this self-rated degree of change appears to be inconsistent with the measures of their participation in

religiously related activities most especially their change in religious service/church attendance, their change in prayer and meditation and the change in the discussion of religion. Although the average student reported less church attendance, less time spent in prayer and meditation, less spirituality and less religious discussion, only 10.3% reported that their religious beliefs and convictions were weaker than when they first started college.

Further, as commented on earlier, this variable of self-reported change in religious beliefs and convictions was the only change variable that had a positive mean for respondents across all institutional affiliations. Also interesting is that this variable did have the highest correlation to the composite change variable. The change reported in this variable was still highly correlated to the overall change in religiosity measure, even if it were contrary in overall measurement to the actual change variable. As will be discussed specifically regarding Lee's (2002) findings, other studies that have relied on this variable as the sole measure of the change in religiosity may have reported results that are not consistent with the actual measures of religiously related actions.

The change in the respondent's religious preference was also an important measure utilized in research question four. As shown in Table 23, a change in religious preference did not normally mean a complete abandonment of a religious identification. In fact, only 4.2% of Baptist, 6.2% of Other Christian, 7.0% of Jewish, 7.2% of Catholic, up to a high for Judeo-Christian religions of 10.5% of Episcopal respondents changed their preference to None on the CSS. This is quite different from Buddhists (19.2%), Mormon (28.1%) and Other Religions (18.1%) who changed at much higher percentages

to None. Clearly, changing religions for all religious preferences did not automatically mean that the respondent became apostate or atheistic.

Further, those religious preferences with the highest adherence percentages were (in order from the highest percentage adherence) Catholic (88.8%), Jewish (88.6%), Islamic (84.9%), Eastern Orthodox (81.4%) and Lutheran (79.1%). Although certainly beyond the scope of this study, it may be that these religions have a much greater heritage commitment, even if current practice drops. Someone may still call themselves of these religions based on family heritage even if the change variables dropped. It is interesting that these religions were often toward the lower end of the change in religiosity no matter what college affiliation was attended. The specific measures by college affiliation and incoming religious preference are presented in Appendix G and summarized in Table 21.

It also appears that CCCU and NACCAP membership provides redundant religiosity measures. Although there are certainly some institutions listed in Appendix A that were members of either CCCU or NACCAP exclusively, the measures provided in the study are almost always extremely close. Comparing Tables 18 and 19 shows that on almost all of the change variables, the measurements are either equivalent or within .01. It appears that having both organizations in the study yielded few distinct findings.

Limitations

It is extremely important that the results presented in this study are utilized correctly. The limitations presented here are deemed to be the most critical. Others included as subordinate issues within any limitation could also be considered separate limitations. These are presented in order of priority.

First, the results of this study should not be construed as reporting findings representative of the entire college population. Clearly, the findings are for those who took the CSS in 2002 and met the selection criteria discussed in the methodology section. Although the respondents were from a national database, the CSS does not purport to be representative of the entire student population for the United States. Comparison of a few descriptive statistics and percentages from the study population to the most recent Almanac issue of the *Chronicle of Higher Education* (2003) underscores this point. As reported in the *Chronicle*, the gender of college students was 56.1% female, 28.1% minority and attending 2,173 four-year institutions – 28.6% of which were public. Further, 64.7% of all students attending a four-year institution were attending one that was public. For the respondents of this study, the descriptive statistics and frequencies reported in Table 5 are quite different from the overall college attending population. They were 64% female and 14.7% minority from 133 four-year institutions with only 9.8% being public. In sharp contrast to the national population, as shown in Table 1, only 8.6% of the respondents were attending a state affiliated institution. Further, 64% of the respondents (10,181 of the 15,895 respondents) were attending a faith/religion based institution.

Although the CIRP annual report of the CIRP Freshman Survey provides normative data on each year's entering college students (Higher Education Research Institute, 2003a), there is no such claim regarding the CSS. In fact, each institution has the freedom to administer the CSS when and to whom they choose. That is why the selection criteria provided in the methodology section were so exacting. It is believed,

however, that one can discuss these findings for respondents within the identified affiliations but not correctly as representative of the entire national student population.

The one area of concern within this limitation is the impact of the gender mix of students. As discussed in the literature review, “most studies find that females are more religious than males (Bensen, Donahue and Erickson 1989; Wilson and Sherkat 1994), although some of the more comprehensive studies of adolescents report few gender differences (e.g., Ozorak 1989)” (Gunnore & Moore, 2002, p. 615). The mix of students by gender in the study population could have resulted in an over-statement of religiosity measures. However, as this study is of the change in these variables, it was assumed that, although there may be a difference in religiosity by gender, the degree of change in religiosity by gender will be similar and proportionate.

Further concerns about the representative capabilities of the student responses include part-time versus full-time and whether the student lived on or off-campus. The study required full-time status at the time of taking the follow-up CSS survey. There was no possibility of tracking part-time status at the time of taking the initial CIRP survey nor at any time during the intervening years. Subsequently, there has been no discussion of the change in religiosity for part-time students compared to full-time. Likewise, although most students indicated they intended to live on-campus, there is no question about where they did live. It was assumed that students attending full-time and living on campus would reflect more institutional related change in religiosity than part-time and/or off-campus students.

Second, there was and has been a rather low participation rate of colleges in the CSS program compared to those that take the CIRP. As reported in the methodology

section, the report of the 1998 CIRP survey included 383,185 respondents from 668 colleges and universities (Sax et al., 1998). Also, as stated in the methodology section, the 2002 CSS had 35,187 cases of which 18,554 had CIRP data (Higher Education Research Institute, 2002a). As shown on Table 1, 15,895 of these met the selection criterion. The point is that the number of CSS participants is well less than 10% of those who take the CIRP. Further, HERI reports that in most years, only about 50% those who complete the CSS will have data from an earlier CIRP on file. This seems to be a low participation rate.

Third, the average number of respondents per institution was quite small, more specifically only 119.5 respondents per institution. As shown in Table 1, even state institutions provided only 105 respondents per institution. This issue is most glaring in viewing the average number of participants from CCCU or NACCAP institutions compared to the average from non-member institutions as shown in Table 2. Non-member institutions had nearly double the number of participants. Realizing that the participation rate of only 50% of CSS with a corresponding CIRP and other selection criterion would have eliminated many possible CSS records, it is unclear as to whether the remaining student records could be considered representative of the college. It was hoped that combining students with similar institutions would allow answering questions by institutional affiliation and CCCU or NACAAP membership, although certainly not for the individual institution.

Fourth, the number of respondents from Independent–No Affiliation and Roman Catholic affiliated colleges was over 50% of the total number of respondents. It is of some concern that this preponderance of students from these two affiliations could skew

the results. As was mentioned, the overall change in religiosity or the individual measures of change were deemed to be the critical points of the study only in rare cases. The main focus has been the change by affiliation in which case the impact of those larger sets of respondents would not be of major concern.

Fifth, the re-categorization of a particular college that had chosen Independent–Non-Profit as its affiliation was entirely at the researcher’s discretion. Almost 37% of the colleges included in the study and 45.3% of the respondents could have been incorrectly categorized. The documentation of the method used to determine the affiliation is included in the methodology section of this study. Although no institution’s data can be released, it may be possible through the permission of HERI to be more specific about why particular institutions were categorized as they were. Suffice it to say that publicly available information on the institution’s web-site was the sole source used for any affiliation decision of the independent non-profit institutions.

Sixth, the combination of some institutions to meet the requirement of no fewer than five institutions in any affiliation could be problematic. Only one institution and its respondents were actually eliminated from the data set. It did not fit any one of the affiliations because it would have been the only non-Catholic or Protestant institution. Other institutions were combined as shown in Appendices C and D to meet the required five institutions in any one category. This meant that some affiliations were the result of a combination of similar but not exactly matching denominations. For example, Methodist and Nazarene institutions were combined to make an eight-member affiliation. Lutheran, Reformed and Moravian were combined to make a six-member affiliation. The resulting measures of religiosity were not purely measures of respondents from a single

denomination's institutions. The mix of respondents in these affiliations could be construed as being problematic.

Seventh, some schools require their students to attend on-campus chapel services that could have been in the thinking of respondents on the religious service/attendance questions. Only a small portion of colleges could possibly have this requirement, more than likely among the 38 CCCU or the 34 overlapping NACCAP institutions. As the average number of respondents from any one school was only about 120 and only a portion of those students would think of on-campus chapels as fulfilling church attendance, it was thought that the impact of this question would be minimal on the findings for the nearly 16,000 respondents.

Eighth, as shown in Table 5, it is of some concern that more than half of the respondents (52.2%) reported that the religious affiliation of the college was not important with only 22.6% reporting this as very important. This is surprising because, as noted in an earlier limitation, over 64% of respondents were attending a faith/religion based institution. Typically, these are of considerably higher cost than public funded institutions and often require a greater effort or commitment to attend. However, these students were willing to pay the extra costs to attend these faith-based institutions. However, as with other concerns, this study was of the change in religiosity and did not purport to measure trends of the entire college attending population.

Ninth, the omission of the born-again variable from the 2002 data set was a considerable limitation in this study's follow-up potential to the findings reported by Railsback (1994). This greatly limited the ability to speak to the issues in that study of the overall change in students identifying themselves as born-again between the CIRP and

the CSS measurements. As was discussed in the methodology, going back to the 2001 data set to include the born-again variable would have eliminated the discussion of a number of important affiliations due to the lower participation of colleges in some categories. The most glaring loss would have been the omission of Baptist as an identifying affiliation. Although a critical problem, it was thought that going to the 2002 CSS represented the best option between two difficult choices.

Tenth, as mentioned in the discussion of findings, there is some concern with the potential of students starting at an institution, transferring out to another institution and then transferring back to the original institution. As this study attempted to ascertain the impact of the college's affiliation on the student's religiosity, some of the reported changes would have to be attributed to the interim institution. With the variables available in the data set, there was no direct way to measure the impact of this circumstance. However, the selection criterion required that the CSS be taken at least in the third year after the CIRP measurement. As shown in Table 4, only 0.6% took the CIRP in 1995 or 1996 at the same institution while 94.6% took the CIRP in 1998 or 1999. With 91.1% of all respondents expecting to complete their Bachelor's degree by June, 2002, it is inconceivable that this transfer out and return issue would have a major consequence. This determination allowed any change in religiosity measurements to be attributed where appropriate to the CIRP/CSS college without concern for any intervening institutions.

Eleventh, the different scales of the change variables may cause some confusion in the interpreting of the results of this study. As shown in Table 3, the scale for the change in prayer/meditation was from -7 to +7. The scale for the change in spirituality

was from -4 to +4. The scale for the change in religious service/church attendance and the scale from the change in the discussion of religion were both -2 to +2. At the same time, the scales for religiousness/religiosity compared to the average person the respondent's age and that of the change in religious beliefs and convictions compared to when the respondent first started college were both from +1 to +5 with 3 indicating no change. For this reason, comparing the means between all variables must be accomplished with caution. That is precisely why the mean of the standardized conversions of these variables was used as the overall measure of the change in religiosity.

Twelfth, the inclusion of the two post-test only variables as indicators of change may be considered a limitation. The other four variables were independent pre-post measures. Especially with the limitation discussed above regarding the dissimilarity of the post measures from the actual measurement of change in religious practices, deleting the post only measure was a consideration. However, the reliability measures discussed in the findings chapter showed that all six measures should be included in the overall measurement of religiosity. Further, in order to compare to other past studies with findings based on use of at least one of these post measures, it was determined appropriate to include all six variables.

Thirteenth, the potential impact of changing one's religious preference between that stated on the CIRP to that of the CSS must be recognized. As a person changes to a new religion, it is recognized that the level of excitement and participation may go up with this change. As presented in Table 23, one of the largest changes for almost all religious preferences was to None, not to another religion. The few exceptions where None was not the largest, were for Presbyterians changing to Other Christian (13.2% with

None second at 8.0%), Quaker to Catholic (27.7% with None too few to measure), Seventh Day Adventist to Catholic (25.0% with None at 0%), Church of Christ to Other Christian (23.3% with None second at 8.9%) and Other Religion to Other Christian (26.4% with None second at 18.1%). In other words, it seems that the typical change, if any, for most religious preferences was to None. It does not seem likely that persons who changed to None would show an increase in their measures of religiosity. Therefore, although important to consider, it was determined that the impact on the measurement of religiosity of changing one's religious preference should be minimal.

Relationship of Current Study to Previous Research

As presented in the review of literature, there has been a revival of interest in the topic of spirituality among college students. However, that review showed that there has been little in-depth study of the actual magnitude of the impact of college affiliation or type on the religiosity of the college student. The lifelong work of Alexander Astin, together with the overviews of Pascarella and Terenzini (1991) and Feldman and Newcomb (1969, 1994) provided the most comprehensive insights into the literature. Most notably, Astin found declines of 31% to 35% in church attendance over the college years (Pascarella & Terenzini, 1991, p. 281). Other studies by Astin (1977) showed that there were greater than expected decreases in conventional religious affiliation and religious behaviors among students attending private, non-religiously affiliated institutions. According to Pascarella and Terenzini (1991), attending secular and public universities produced declines in students' religious values and behaviors, whereas enrollment in church-related colleges tended to support and strengthen the students' existing religious values and behaviors. Chickering (1971) summarized this issue some

years ago. He stated that “a college’s characteristics do make a difference to student development....Similar students who enter different colleges change differently” (p. 14). The present study supports this past research.

In general, the literature has consistently reported a decline in religious values, attitudes and behaviors over the college years. Critical to this study, colleges have been shown to influence the change in the student religious orientation and commitment with secular institutions exerting the strongest, most consistent negative influences as measured by reduction in religiosity. On the other hand, church-related colleges have shown a positive impact on religiosity measures. The only exception to this overall finding of decreasing religiosity was Lee’s (2002) recent study. Lee reported an actual increase and stated that the “widely publicized ‘secularizing’ effect of college on students is over-generalized” (p. 376). Lee’s main indicator variable was the self-reported change in religious beliefs and convictions provided by respondents on the CSS. This same variable was one of the two post-test measures utilized in the present study (SLFCHG07). As noted in this study, this variable is a self-assessment that is contrary to the actual change found with the four change variables. If this study had only relied on this measure as the indicator of the change in religiosity, the conclusion here would have been the same as Lee’s. This one measure was found to be a rather biased indicator of the student’s religiosity. However, when coupled with five other measures, this one variable contributes to the reliability of the overall religiosity variable and to a more complete understanding of the change in religiosity over the college years.

Railsback’s (1994) study utilized much of the same CIRP/CSS-related data only for a data set from over a decade ago. As has been expressed earlier, his study provided

much of the inspiration for the undertaking of this study. As reported in the review of literature, he found differences in maintaining born-again status depending on the type of institution attended. One of his key findings related to the impact of attending non-Christian institutions on the drop in born-again status and the decline in church attendance. He reported that approximately 52% of students who attended public institutions no longer called themselves born-again or had not attended any religious services in over a year. Updating his research was among the original objectives of this study. As has been stated before, regrettably, the identifying question of born-again was dropped for the 2002 CSS. There is really no correlation that can be drawn across the study populations between the changes measured here and what Railsback reported. His study will have to stand as a major foundational work in this area of understanding the impact of college affiliation on changes in religiosity.

Related to this study, other researchers have provided considerable information that was discussed more thoroughly in the literature review. However, a few more require some brief comments. Caplovitz and Sherrow found that the apostasy rate among Catholics was about the same as for Protestant and Jewish faiths. The present study only was able to measure the change from a particular religion to none. As can be seen in Table 23, the present study would support the similarity of change patterns of Catholic and Jewish respondents. However, the change patterns of all Protestants compared to Catholics is not possible in this study's design. Protestant students were reported with their actual denominational preference.

Roof (1977) reported that change patterns of Catholics and Protestants were similar on his composite religiosity measure. As shown in Table 21, the present study

found that Catholics were in fact similar in change patterns to what appears to be the more historical Protestant faiths (e.g. Lutheran, Episcopal, etc.) but dissimilar to Other Christian and Baptist respondents at nearly all affiliations. In 1988, Hadaway and Roof reported that inherent college belief systems that counter religion can lead to a weakening of student religious commitment (as cited in Lee, 2002). This finding was confirmed in this study as State and Independent–No Affiliation colleges typically showed the most negative changes in overall religiosity.

Although this study did not label different Protestant religions as more or less liberal, Gunnoe (2002) found that more conservative denominations lose less membership than the more liberal ones. As detailed in Table 23, counter to that finding, this study showed that Quaker and Church of Christ, known as more conservative denominations, had among the lowest adherence rates (34.0% and 51.7% respectively). However, the adherence rates for Presbyterian (68.9%), Episcopal (73.5%), Catholic (88.8%) and Baptist (71.4%) respondents were much higher. It appears that the difference in these overall percentages depended on the affiliation of the college attended.

In keeping with previous research, this study relied heavily on the measurement of change in attendance at religious services and church as a key indicator of changing religiosity. Lee (2002) was again instrumental in summarizing the use of this key variable. She indicated that it seems to predict changes in religious convictions more so than other measures. Railsback (1994) also found that attending religious services was a good predictor of religious commitment. Lee (2000) went so far as to suggest that attending religious services was a good predictor by itself. The recommendations that follow will be tied to this thought. However, this study attempted to provide more

specific answers by the affiliation of the college attended as well as the students' religious preferences. The suggestions will attempt to reflect that level of specificity.

Recommendations and Suggestions for Additional Research

In thinking through what has been accomplished here coupled with so many prior research projects by many scholars, it is clear that the topic of changes in religiosity still has vast areas to be explored. This study was limited to the differing degrees of change in religiosity primarily depending on the affiliation of the college attended. The following suggestions for additional research include those areas of perceived need that flow directly from this study's review of literature, findings and limitations.

First, a nationwide stratified sample of four-year college students with both pre- and post-measures of religiosity is needed. As mentioned in the limitations of this study, comments and conclusions here must be limited to those who took the CSS and met the selection criterion. It was exciting to hear the progress toward such a data set with the Spirituality in Higher Education project underway through the Higher Education Research Institute at UCLA and supported by the Templeton Foundation. Although the post-assessment portion is some years away, preliminary findings are expected in December, 2003. The level of understanding of religious and spiritual change and growth will be greatly expanded by the results of this project.

Second, understanding the amount of change and when it occurs during the college years is an area for greater study. A recently released study of the dimensions of change in the first year of college is a great beginning to this understanding (Bryant, Choi, & Yasuno, 2003). This study will also prove helpful in further defining the differences and connections of religion and spirituality.

Third, as many studies have pointed to attendance at religious services or church as one of the more consistent measures of changes in religiosity, it is suggested that questions regarding this activity expand beyond the current choice set used in the CIRP/CSS data set and related instruments: frequently, occasionally and not at all. Definitions of frequently and occasionally are limited to the perspective of the respondent and could vary greatly. Adding choices such as the following may give more consistency and specificity to answers: greater than once a week, once a week, at least once a month, a few times a year, about once a year, less than once a year, not at all. Further, it will be important to differentiate between on-campus chapels or convocations and off-campus religious services. As some churches use campus facilities, even more specificity may be required.

Fourth, this study discussed adherence rates to the students' religious preference at the point of entry as one of the indications of religiosity change. Within that discussion, it was mentioned that some of those with the higher adherence rates could be retained as a matter of heritage and not necessarily supported by current religious activities and commitments. Exploration of the changes in actual religious practices by religion is another area needing further scrutiny.

Fifth, stratification of religious preferences using a scale such as Cuninggim's continuum of denominational types (Gough, 1981) would be a way to further study the changes in religiosity by the degree of conservatism of the respondent's religion. As pointed out in this study, there has been some speculation that those from more conservative backgrounds may experience less change due to the upfront higher "costs"

of initial membership. Exploring this area in more detail and utilizing more religiosity variables is an area that appears to need further study.

Sixth, a measure of the degree of commitment to the practices and tenets of one's incoming religious preference with a post-measure would seem to be a worthy addition to most study instruments in this area. Having just post measures of change in overall convictions and religiousness was a recognized limitation of this study.

Seventh, changes in student religiosity and the degree of involvement in campus ministries and local churches is another area of potential research. The support from peers and on-going involvement is important to maintaining and strengthening one's religious connection and may be especially important at non-religiously affiliated institutions. This topic may require some exploration of the legal issues surrounding sharing religious preferences and contact information of incoming students as part of publicly available information releases. However, it is postulated that the greater the connection and involvement with local ministries and churches, the greater the potential for at least maintaining if not strengthening student religiosity over the college years no matter the affiliation of the college attended.

Although the focus of this study has been to simply find out if there is a difference in religiosity change by college affiliation and student religious preference, some concluding recommendations seem warranted based on the review of literature and the analysis of this data. These are provided for practitioners, religious leaders, parents and students, both prospective and current, in the following paragraphs.

For higher education administrators and faculty, it appears that it is time to reassess the impact of the college environment on the religiosity of students. College staff

in public and independent-non affiliated institutions especially need to develop methods that are conducive to inquiry without causing harm to legitimate religious beliefs and practices. Encouraging involvement in campus ministries and local churches appears to be a good start. Further, insuring that religious beliefs are accommodated and supported in the academic and residential lives of the students seems critical. Simple accommodation of divergent beliefs appears to be insufficient. More open discussion of beliefs without promoting any one religion would seem to be allowable within legal requirements most especially the non-establishment clause of the constitution. It also seems that providing legitimate directory information to area ministries would be an important part of relating the “town and gown.” Ultimately, all colleges must provide an environment where religious beliefs can be explored and allowed to grow without denigrating the person for having these beliefs.

More specifically for denominationally related colleges, it appears that this study has high-lighted critical differences in the religious growth of students attending these institutions versus those who do not. This support and growth of religious beliefs should be celebrated and promoted as a clear distinctive in the marketing and recruitment efforts of the college. With the differences shown in religiosity change, it seems quite appropriate for denominationally related colleges to utilize these points to encourage students of compatible religious beliefs to consider their college versus other alternatives.

For all institutions, the measures provided in this study could be utilized as benchmarks to identify the level of accommodation and support provided on an individual campus. If students take the CIRP and CSS sequence, it appears that the analysis could be

compared to the means presented here. If an institution appears to be outside the norm, further investigation and interventions could be warranted.

For religious leaders, this study has shown that there are significant differences in the change of religiosity by the student's religion or denomination. Pastors and leaders of some religions could be rather shocked by the low adherence rates of their religions. For many, it appears that more diligence must be applied to preparing students for college life and the issues they might face. Providing continual follow-up and support to their students when in college appears to be a needed effort for any congregation. Further, attracting and serving students who come to the area to attend local colleges also seems to be of importance.

For parents, the burden of financial support may force consideration of cheaper public institutions. The differences shown in this study should assist in determining the potential religious change risk that a student may face when considering college options. The issue becomes one of cost versus risk. Put another way, cheaper cost may require too high a price. No matter the final college selection, parents are encouraged to reinforce religious service/church attendance. As this one activity variable has been shown to have the highest correlation to religiosity change and appears to suffer the largest mean change, the student's involvement in area ministries and services seems to be of major importance.

For students, as the maturing/changing process moves from a parental environment to one of independence, the choice of the college to attend must be considered wisely. As discussed by Bryant (2003) in a very recent article, students become less religiously active during the first year of college. Realizing that many

changes occur during the first year, insuring that religion and its practice are not abandoned will take effort on the part of the student. As the single most predictive activity is attendance at religious services, the student is encouraged to get involved in a local church as well as campus ministries. Finding peers who share the same concerns and values is also important for healthy discussion and growth.

Finally, if overall religiosity growth is important, students should consider attending a related religion-based institution for at least the first year after high school especially if attending a college away from home. Again based on some of Bryant's (2003) discussion, the changes that potentially occur in that first critical year can set the tone for the student's life-time religious commitment. Although finding an institution that is supportive of the student's religious preference is important, at the very least students are encouraged to consider attending institutions that accommodate the student's religious preference. This seems to be especially important if the student will be attending college away from home. The support of faculty and peers during the critical first year and the subsequent college years appears to be reflected in the religious commitment of the student for life.

REFERENCES

- Accrediting Association of Bible Colleges. (2003). Statistical report for all AABC accredited colleges - 2002.
- Anderson, C. L. (1995). How can my faith be so different? The emergence of religious identity in college women (campus ministry). Indiana University, *Dissertation Abstracts International*, 56, 07A.
- Anderson, K. L. (1984). *The effects of college type and characteristics on educational attainment*. Boca Raton: Florida Atlantic University, Department of Sociology and Social Psychology. (ERIC Document Reproduction Service No. ED256206).
- Anderson, R. G., Jr. (2001). The role of religiosity as a determinant of persistence for minority and nontraditional college students: A logistic regression analysis of a theoretical model of student persistence. University of Houston, *Dissertation Abstracts International*, 62, 09A.
- Astin, A. W. (1977). *Four critical years. Effects of college on beliefs, attitudes, and knowledge*. San Francisco: Jossey-Bass.
- Astin, A. W. (1991). The changing American college student: Implications for educational policy and practice. *Higher Education*, 22(2), 129-143.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Astin, A. W. (1998). The changing American college student: Thirty-year trends, 1966-96. *Review of Higher Education*, 21(2), 115-135.
- Astin, A. W., Higher Education Research Institute, & American Council on Education. (1997). *The American freshman: Thirty-year trends, 1966-1996*. Los Angeles, CA: Higher Education Research Institute Graduate School of Education & Information Studies University of California Los Angeles.
- Bloom, A. A. (1988). *The closing of the American mind*. New York: Touchstone Books [Imprint]; Simon & Schuster Trade Paperbacks.

- Bok, D. (1982). *Beyond the ivory tower. Social responsibilities of the modern university*. Cambridge, MA: Harvard University Press.
- Bolen, J. H. (1994). Faith development and higher education. Iowa State University, *Dissertation Abstracts International*, 56, 02A.
- Bosma, K., & O'Rear, M. (1980). *AABC survey: Educational experiences and career patterns of bible college graduates, report of assessing ministry opportunities project*. Orlando, FL: Accrediting Association of Bible Colleges.
- Braskamp, L. A., & American Educational Research Association. (1968). *Changes in life goals of college students and their relationships to personality and college environments*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL. (ERIC Document Reproduction Service No. ED022200).
- Brown, L. B. (1987). *The psychology of religious belief*. Orlando, FL: Academic Press.
- Bryant, A. N., Choi, J. Y., & Yasuno, M. (2003). Understanding the religious and spiritual dimensions of students' lives in the first year of college. *Journal of College Student Development*, 44(6), 723-745.
- Bucher, A. A., & Reich, K. H. (1991). Annotated bibliography on religious development. *New Directions for Child Development*, 1(52), 107-120.
- Budziszewski, J. A. (1999). *How to stay Christian in college: An interactive guide to keeping the faith*. Colorado Springs, CO: NavPress Publishing Group.
- Caplovitz, D., & Sherrow, F. (1977). *The religious drop-outs: Apostasy among college graduates*. Beverly Hills, CA: Sage Publications.
- Cherry, C., DeBerg, B. A., & Porterfield, A. (2001). *Religion on campus*. Chapel Hill, NC: University of North Carolina Press.
- Chickering, A. W. (1966). *Institutional differences and student characteristics*: (ERIC Document Reproduction Service No. ED014099).

- Chickering, A. W. (1968). *The development of autonomy*: (ERIC Document Reproduction Service No. ED014749).
- Chickering, A. W. (1969). *Education and identity* (Facsimile, Reprint ed.). Ann Arbor, MI: Books on Demand.
- Chickering, A. W., & American Educational Research Association. (1971, February). *Personality development during the college years*. Paper presented at the Symposium of the American Educational Research Association, New York, NY. (ERIC Document Reproduction Service No. ED047608).
- Chickering, A. W., Astin, A. W., & Higher Education Research Institute. (2003, March). *The initiative for authenticity and spirituality in higher education*. Paper presented at the NASPA - Gathering at the Gateway - Renewing Our Spirit, St. Louis, MO.
- Chickering, A. W., & Reisser, L. (1993). *Education and identity. (2nd ed.)*. *The Jossey-Bass higher and adult education series*. San Francisco, CA: Jossey-Bass.
- Chronicle of Higher Education. (2003). *Almanac 2002-3*. Retrieved November 10, 2003, from <http://chronicle.com/prm/weekly/almanac/2002/nation/nation.htm>
- Colson, C. (Writer) (2002a). Faith attack: Surviving college with faith [Radio]. Merrifield, VA: BreakPoint-Prison Fellowship Ministries, Inc.
- Colson, C. (Writer) (2002b). Fears and fallacies: How to stand your ground [Radio]. Merrifield, VA: BreakPoint-Prison Fellowship Ministries, Inc.
- Colson, C. (Writer) (2002c). The way it isn't: Fighting temptation [Radio]. Merrifield, VA: BreakPoint-Prison Fellowship Ministries, Inc.
- Council for Christian Colleges & Universities. (2003). Retrieved October 23, 2003, from <http://www.cccu.org/about/about.asp>
- Dalton, J. C. (1989). The influence of peer culture on college student values. *NASPA Journal*, 26(3), 180-186.

- Dalton, J. C. (2001). Career and calling: Finding a place for the spirit in work and community. *New Directions for Student Services*, 95(Autumn).
- Dudley, R. L. (1994). Faith maturity and social concern in college-age youth: Does Christian education make a difference? *Journal of Research on Christian Education*, 3(1), 35-49.
- Elkind, D. (1999). Religious development in adolescence. *Journal of Adolescence*, 22(2), 291-295.
- Feldman, K. A., & Newcomb, T. M. (1969). *The impact of college on students, vol. 1: An analysis of four decades of research* (Reprint ed.). Ann Arbor, MI: Books on Demand.
- Feldman, K. A., & Newcomb, T. M. (1994). *The impact of college on students*. Piscataway, NJ: Transaction Publishers.
- Fowler, J. W. (1981). *Stages of faith: The psychology of human development and the quest for meaning* (1st ed.). San Francisco, CA: Harper & Row.
- Fowler, J. W., Keen, S., & Berryman, J. (1985). *Life maps: Conversations on the journey of faith*. Waco, TX: Word Books.
- Funk, R. B., & Willits, F. K. (1987). College attendance and attitude change: A panel study, 1970-81. *Sociology of Education*, 60(4), 224-231.
- Glock, C. (1962). On the study of religious commitment. *Religious Education*, 57, 98-110.
- Gold, B. K., & Los Angeles City College. (1967). *Religious attitudes of college students at Harvard University, Radcliffe College, and Los Angeles City College: Highlights of comparative studies made in 1946-48 and in 1966-67*: Los Angeles City College (ERIC Document Reproduction Service No. ED013073).
- Gorsuch, R. L. (1994). Toward motivational theories of intrinsic religious commitment. *Journal for the Scientific Study of Religion*, 33(4), 315.

- Gough, R. R. (1981). An investigation of religious climate at Protestant church-related colleges in the United States. The University of Wisconsin-Madison, *Dissertation Abstracts International*, 42, 04A.
- Gunnoe, M. L., & Moore, K. A. (2002). Predictors of religiosity among youth aged 17-22: A longitudinal study of the National Survey of Children. *Journal for the Scientific Study of Religion*, 41(4), 613-622.
- Harris, M. B. (1998). *Basic statistics for behavioral science research* (2nd ed.). Boston, MA: Allyn and Bacon.
- Hartley, H. (2003, March). *How college affects students' spirituality: What research and practice tell us*. Paper presented at the NASPA - Gathering at the Gateway - Renewing Our Spirit, St. Louis, MO.
- Higher Education Publications Inc. (2003). *Higher education directory*. Falls Church, VA: Author.
- Higher Education Research Institute. (2002a). *2002 CSS data file documentation*. Los Angeles, CA: University of California, Los Angeles.
- Higher Education Research Institute. (2002b). *College Student Survey*. Retrieved August 15, 2002, from <http://www.gseis.ucla.edu/heri/cirp.htm>
- Higher Education Research Institute. (2003a). *Cooperative institutional research program (CIRP)*. Retrieved November 10, 2003, from <http://www.gseis.ucla.edu/heri/cirp.html>
- Higher Education Research Institute. (2003b). *Spirituality in higher education: A national study of college students' search for meaning and purpose*. Retrieved November 10, 2003, from <http://www.spirituality.ucla.edu/>
- Hunsberger, B., Pratt, M., & Pancer, S. M. (2001). Adolescent identity formation: Religious exploration and commitment. *Identity: An International Journal of Theory and Research*, 1(4), 365-386.
- Jablonski, M. A. (Ed.). (2001). The implications of student spirituality for student affairs practice. *New Directions for Student Services*, 95(Autumn).

- Johnson, C., Lee, J. J., & Lindholm, J. (2003, March). *Renewing spirituality in higher education*. Paper presented at the NASPA - Gathering at the Gateway - Renewing Our Spirit, St. Louis, MO.
- Kohlberg, L. (1976). Moral stages and moralization. In T. Lickona (Ed.), *Moral development and behavior*. New York, NY: Holt, Rinehart and Winston.
- Lee, J. J. (2000, April). *Changing religious beliefs among college students*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Lee, J. J. (2001). *Changing worlds, changing selves: The experience of the religious self among catholic collegians*. Los Angeles, CA: University of California - Los Angeles. (ERIC Document Reproduction Service No. ED451825).
- Lee, J. J. (2002). Religion and college attendance: Change among students. *The Review of Higher Education*, 25(4), 369-384.
- Leftwich, R. V. (1984). The relationship between religion orientation and student development (intrinsic, extrinsic, indiscriminate). University of Georgia, *Dissertation Abstracts International*, 45, 12A.
- Love, P., & Talbot, D. (1999). Defining spiritual development: A missing consideration for student affairs. *NASPA Journal*, 37(1), 361-376.
- Love, P. G. (2002). Comparing spiritual development and cognitive development. *Journal of College Student Development*, 43(3), 357-373.
- Lovinger, S. L., Miller, L., & Lovinger, R. J. (1999). Some clinical applications of religious development in adolescence. *Journal of Adolescence*, 22(2), 269.
- Low, C. A., & Handal, P. J. (1995). The relationship between religion and adjustment to college. *Journal of College Student Development*, 36(5), 406-412.
- Lowery, J. W. (2000). Walking the halls of ivy with Christ: The classroom and residential experiences of undergraduate evangelical students. *DAI*, 61(11A), 288.

- Marsden, G. M. (1994). *The soul of the American university. From Protestant establishment to established nonbelief*. New York, NY: Oxford University Press.
- Mead, F. S., & Hill, S. S. (1995). *Handbook of denominations in the United States* (10th ed.). Nashville: Abingdon Press.
- Merriam-Webster's collegiate dictionary*. (10th. ed.). (2001). Springfield, MA: Merriam-Webster.
- Mockabee, S. T., Monson, J. Q., & Grant, J. T. (2001). Measuring religious commitment among Catholics and Protestants: A new approach. *Journal for the Scientific Study of Religion*, 40(4), 675-690.
- National Association of Christian College Admissions Personnel. (2003). Retrieved October 23, 2003, from <http://www.gospelcom.net/naccap/what.html>
- National Association of Student Personnel Administrators. (2003, March). *Conference agenda*. Paper presented at the NASPA - Gathering at the Gateway - Renewing Our Spirit, St. Louis, MO.
- National Research Center for College and University Admissions. (1994). *National Geodemographic Research Project*. Lee's Summit, MO: Author.
- Olson, D. V. A., & Perl, P. (2001). Variations in strictness and religious commitment within and among five denominations. *Journal for the Scientific Study of Religion*, 40(4), 757-764.
- Ozorak, E. W. (1986, August). *The development of religious beliefs and commitment in adolescence*. Paper presented at the Annual Convention of the American Psychological Association, Washington, DC. (ERIC Document Reproduction Service No. ED273884).
- Ozorak, E. W. (1987, August). *The reinforcements of religiousness in adolescence*. Paper presented at the Annual Convention of the American Psychological Association, New York, NY. (ERIC Document Reproduction Service No. ED295088).
- Pallant, J. (2001). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (version 10)*. Philadelphia: Open University Press.

- Pang, H. (1961). *Religious attitude differences among student denominational groups*. Unpublished Master of Arts, University of Arkansas, Fayetteville.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco, CA: Jossey-Bass.
- Pouryoussefi, H. (1984). College impact on religiosity of Muslim students studying in the United States. Western Michigan University, *Dissertation Abstracts International*, 45, 03A.
- Railsback, G. L. (1994). An exploratory study of the religiosity and related outcomes among college students. University of California, Los Angeles, *Dissertation Abstracts International*, 55, 03A.
- Roof, W. C., & Hadaway, C. K. (1977). Shifts in religious preference in the mid-seventies : Review of the polls. *Journal for the Scientific Study of Religion*, 16(4), 409-412.
- Roof, W. C., & Hadaway, C. K. (1979). Denominational switching in the seventies: Going beyond Stark and Glock. *Journal for the Scientific Study of Religion*, 18(4), 363-377.
- Sax, L. J., Astin, A. W., Korn, W. S., Mahoney, K. M., & Higher Education Research Institute. (1998). *The American freshman: National norms for fall 1998*. Los Angeles, CA: University of California, Los Angeles.
- Serow, R. C. (1989). Community service, religious commitment, and campus climate. *Youth and Society*, 21(1), 105-119.
- Shaver, D. G. (1985). A longitudinal study of moral development at a conservative, religious liberal arts college. *Journal of College Student Personnel*, 26(5), 400-404.
- Tisdell, E. J. (2003). *Exploring spirituality and culture in adult and higher education*. San Francisco: Jossey-Bass.
- Wheeler, M. S. (1989). The nature of the relationship between the style of parenting and the religiosity and spiritual well-being of college students. *DAI*, 50(08A), 192.

- Willimon, W. H. (1997). Religious faith and the development of character on campus. *Educational Record*, 78(3-4), 73-79.
- Worthington, E. L., Jr., Wade, N. G., Hight, T. L., Ripley, J. S., McCullough, M. E., Berry, J. W., et al. (2003). The Religious Commitment Inventory -- 10: Development, refinement, and validation of a brief scale for research and counseling. *Journal of Counseling Psychology*, 50(1), 84-96.
- Zern, D. S. (1989). Some connections between increasing religiousness and academic accomplishment in a college population. *Adolescence*, 24(93), 141-154.

Appendix A

Institutions Included in Study

Institution Name	State	SHAFFIL ^a	CCCU ^b	NACCAP ^c
Abilene Christian University	TX	790	Y	
Albertson College	ID	210		
Asbury College	KY	212	Y	Y
Augsburg College	MN	970		
Avila College	MO	300		
Azusa Pacific University	CA	212	Y	Y
Bethel College	MN	540	Y	Y
Bethel College	IN	690	Y	Y
Bethel College	KS	690	Y	
Bluffton College	OH	690	Y	Y
Bucknell University	PA	210		
Cabrini College	PA	300		
California Baptist University	CA	540	Y	Y
California State University-Chico	CA	120		
California State University-Los Angeles	CA	120		
Calvin College	MI	970	Y	Y
Cedar Crest College	PA	790		
Chatham College	PA	210		
Claremont McKenna College	CA	210		
Coe College	IA	210		

Institutions Included in Study – continued

<u>Institution Name</u>	<u>State</u>	<u>SHAFFIL</u>	<u>CCCU</u>	<u>NACCAP</u>
College of Mount Saint Vincent	NY	210		
College of New Rochelle	NY	211		
College of Saint Mary	NE	300		
College of the Holy Cross	MA	300		
Colorado Christian University	CO	212	Y	Y
Cornerstone University	MI	540	Y	Y
Creighton University	NE	300		
Davidson College	NC	660		
Eastern College	PA	540	Y	Y
Eastern Mennonite University	VA	690	Y	Y
Fairfield University	CT	211		
Fordham University	NY	211		
Fresno Pacific University	CA	690	Y	Y
Gannon University	PA	300		
George Fox University	OR	690	Y	Y
Gonzaga University	WA	300		
Gordon College	MA	212	Y	Y
Goshen College	IN	690	Y	Y
Grace College and Seminary	IN	690	Y	Y
Greenville College	IL	710	Y	Y
Gustavus Adolphus College	MN	970		

Institutions Included in Study – continued

<u>Institution Name</u>	<u>State</u>	<u>SHAFFIL</u>	<u>CCCU</u>	<u>NACCAP</u>
Hanover College	IN	660		
Harvey Mudd College	CA	210		
Huntington College	IN	690	Y	Y
IAU of Puerto Rico-Ponce	PR	210		
Illinois Wesleyan University	IL	210		
John Carroll University	OH	300		
Johnson C Smith University	NC	210		
Kenyon College	OH	210		
Knox College	IL	210		
Kutztown University of Pennsylvania	PA	120		
Lafayette College	PA	210		
Lasell College	MA	210		
Lenoir-Rhyne College	NC	970		
Lipscomb University	TN	790	Y	
Loyola College in Maryland	MD	300		
Loyola Marymount University	CA	300		
Lyon College	AR	660		
Macon State College	GA	120		
Marywood University	PA	300		
Master's College	CA	212	Y	Y
McPherson College	KS	690		

Institutions Included in Study – continued

Institution Name	State	SHAFFIL	CCCU	NACCAP
Mercyhurst College	PA	300		
Middlebury College	VT	210		
Mississippi College	MS	540		
Missouri Southern State College	MO	120		
Molloy College	NY	211		
Monmouth College	IL	660		
Monmouth University	NJ	210		
Moore College of Art and Design	PA	210		
Moravian College	PA	970		
Mount Olive College	NC	540		
Mount Saint Mary College	NY	211		
Mount Vernon Nazarene University	OH	710	Y	Y
North Central University	MN	790	Y	Y
North Georgia College & State Univ.	GA	120		
Northwest Nazarene University	ID	710	Y	Y
Northwestern College	MN	212	Y	Y
Northwestern College	IA	970	Y	Y
Notre Dame College	OH	300		
Nyack College	NY	790	Y	Y
Otterbein College	OH	710		
Palm Beach Atlantic College	FL	790	Y	Y

Institutions Included in Study – continued

<u>Institution Name</u>	<u>State</u>	<u>SHAFFIL</u>	<u>CCCU</u>	<u>NACCAP</u>
Pennsylvania College of Technology	PA	120		
Pepperdine University	CA	212		
Pine Manor College	MA	210		
Point Loma Nazarene University	CA	710	Y	Y
Presbyterian College	SC	660		
Quinnipiac University	CT	210		
Regis University	CO	300		
Rensselaer Polytechnic Institute	NY	210		
Robert Morris College	IL	210		
Sacred Heart University	CT	211		
Saint Anselm College	NH	300		
Saint John's University – Jamaica	NY	300		
Saint John's University – Staten Island	NY	300		
Saint Joseph's University	PA	300		
Saint Mary's College of California	CA	300		
Saint Norbert College	WI	300		
Saint Peter's College	NJ	300		
Saint Vincent College	PA	300		
Salve Regina University	RI	300		
Santa Clara University	CA	211		
Sarah Lawrence College	NY	210		

Institutions Included in Study – continued

Institution Name	State	SHAFFIL	CCCU	NACCAP
Seattle University	WA	300		
Seton Hall University	NJ	300		
Simpson College	CA	710	Y	Y
Southwest Missouri State University	MO	120		
Spring Arbor College	MI	710	Y	Y
SUNY College-Potsdam	NY	120		
Sweet Briar College	VA	210		
Tabor College	KS	690	Y	Y
Taylor University	IN	212	Y	Y
Texas Tech University	TX	120		
Trinity Christian College	IL	212	Y	Y
Trinity University	TX	210		
Tulane University	LA	210		
University of California-Los Angeles	CA	120		
University of New Hampshire	NH	120		
University of Portland	OR	211		
University of Redlands	CA	210		
University of Richmond	VA	210		
University of Science and Arts of Okla.	OK	120		
Ursinus College	PA	210		
Viterbo University	WI	300		

Institutions Included in Study – continued

Institution Name	State	SHAFFIL	CCCU	NACCAP
Wabash College	IN	210		
Warner Southern College	FL	790	Y	Y
Waynesburg College	PA	660	Y	
Wesleyan College	GA	710		
Westmont College	CA	212	Y	Y
Wheaton College	MA	210		
Wheeling Jesuit University	WV	300		
Worcester Polytechnic Institute	MA	210		

^aSHAFFIL – college affiliation code determined by the researcher. See Appendix C for the rationale and Appendix D for denomination and institution counts

^bCCCU – “Y” indicates membership in the Council for Christian Colleges and Universities

^cNACCAP – “Y” indicates membership in the National Association for Christian College Admission

Personnel

Appendix B

Higher Education Directory Affiliation/Control Codes

11 Federal	36 Evangelical Congregational Church
12 State	37 Evangelical Covenant Church of
13 Local	America
14 State/Local	38 Evangelical Free Church of America
15 State Related	39 Evangelical Lutheran Church
18 Evangelical Lutheran Synod	40 Alabama Baptist State Convention
19 Pentecostal/Charismatic Non-Denomin.	41 Free Will Baptist Church
20 Unification Church	42 Interdenominational
21 Independent Non-Profit	43 Mennonite Brethren Church
22 American Evangelical Lutheran Church	44 Moravian Church
23 American Missionary Association	45 North American Baptist
24 African Methodist Episcopal Zion Church	46 American Lutheran and Lutheran
25 Proprietary	Church in America
26 Advent Christian Church	47 Pentecostal Holiness Church
27 Assemblies of God Church	48 Christian Churches and Churches of
28 Brethren Church	Christ
29 Brethren in Christ Church	49 Reformed Church in America
30 Roman Catholic	50 Reformed Episcopal Church
31 Church Of God in Christ	51 African Methodist Episcopal
32 Church Of New Jerusalem	52 American Baptist
33 Wisconsin Evangelical Lutheran Synod	53 American Lutheran
34 The Christian and Missionary Alliance	54 Baptist
35 Christian Reformed Church	55 Christian Methodist Episcopal

- | | |
|---|---|
| 56 Church of Christ | 78 Multiple Protestant Denominations |
| 57 Church of God | 79 Other Protestant |
| 58 Church of the Brethren | 80 Jewish |
| 59 Church of the Nazarene | 81 Reformed Presbyterian Church |
| 60 Cumberland Presbyterian | 82 Reorganized Latter-Day Saints Church |
| 61 Christian Church (Disciples of Christ) | 83 Seventh Day Baptist Church |
| 62 Tribal Control | 84 United Brethren Church |
| 63 Friends United Meeting | 85 Lutheran |
| 64 Free Methodist | 86 Pentecostal Church of God |
| 65 Friends | 87 Missionary Church |
| 66 Presbyterian Church, (U.S.A.) | 88 Non-denominational |
| 67 Lutheran Church in America | 89 Wesleyan Church |
| 68 Lutheran Church - Missouri Synod | 90 Young Men's Christian Assoc |
| 69 Mennonite Church | 91 Greek Orthodox |
| 70 General Conference Mennonite Church | 92 Russian Orthodox |
| 71 United Methodist | 93 Unitarian Universalist |
| 72 Presbyterian Church in America | 94 Latter-day Saints |
| 73 Protestant Episcopal | 95 Seventh-day Adventist |
| 74 Churches of Christ | 96 Church Of God Of Prophecy |
| 75 Southern Baptist | 97 Evangelical Lutheran Church In Amer |
| 76 United Church of Christ | 98 Fellowship of Grace Brethren Church |
| 77 United Presbyterian, U.S.A. | 99 Other |

Appendix C

Denominational Relationships Rationale

The effort to group institutions into proper denominationally related sets has been discussed in the methodology section of this document. These pages only attempt to present more detail of the rationale used to create the groupings. Extensive use of the *Handbook of Denominations in the United States* (Mead & Hill, 1995) has been made to avoid any bias of the writer. Although other guides may be available, for consistency it was determined that only one authority should be utilized. As this publication and its predecessors have been utilized for decades and it is now in its tenth revision, it was chosen as the final guide. The SHAFFIL code used in the study is in parentheses after each group name. The groupings used in this study were determined as follows:

State (120) – All institutions with HED code 11 to 15 in the *2003 Higher Education Directory* (Higher Education Publications Inc., 2003) were included in this group.

Independent–No Affiliation (210) – note that “Non-Profit” in the HED title for all code 21’s is assumed to be understood for this study – All those with HED code 21 and no reference to any affiliation in their purpose or mission statement were included in this group.

Independent–Catholic (211) – All those with HED code 21 and a clear reference in their purpose or mission statement to a current affiliation or adherence to the teachings of the Roman Catholic Church were included in this group.

Independent–Protestant (212) – All those with HED code 21 and a clear reference in their purpose or mission statement to a current affiliation or adherence to the teachings of the Protestant faith were included in this group.

Roman Catholic (300) – All those with HED affiliation code 30 were included in this group.

Baptist (540) – All those with HED affiliation codes that would be classified as related to Baptist were included in this group. These included Baptist, Southern Baptist, Free Will Baptist and American Baptist. According to the manual used for this determination, “every Baptist group uses ‘Baptist’ in its title” (Mead & Hill, 1995, p. 30). There are clear relationships among the twenty-seven Baptist denominations “...bound together by an amazingly strong ‘rope of sand,’ in a great common allegiance to certain principles and doctrines...” (p. 49). This included Southern Baptist who “generally hold to a more conservative theology than their Northern relatives, but the basic tenets of belief are quite the same” (p. 77). Free Will Baptist were also a part of this group. They were noted as “one of the few Baptist groups that practice[s] open Communion” (p. 64). Finally, this group also included American Baptists. This denomination is known as “less conservative in thought and theology than those in the Southern Baptist Convention” (p. 58).

Presbyterian (660) – Enough colleges of the Presbyterian Church, (U.S.A.) were identified to be their own group. Their doctrine “rested on the Westminster Confession” (p. 257) and is shown below to relate other groupings.

Anabaptist (690) – The particular denominations of the Mennonite, Brethren, Missionary and Friends are all noted as part of the Anabaptist tradition (p. 306). These included the Mennonite Church, Mennonite Brethren Church, Church of

the Brethren, General Conference Mennonite Church, United Brethren Church, Missionary Church, Fellowship of Grace Brethren Church and Friends.

Methodist and Nazarene (710) – These denominations were reported with common backgrounds. The Church of the Nazarene’s “theological background is Methodist” (p. 118). United Methodist and Free Methodist were also included in this group.

Lutheran, Reformed and Moravian (970) – Lutheran and Reformed are together in Hunter’s Four Traditions as part of the Reformed-Confessional tradition (Mead & Hill, 1995, p. 306). This identification also included Presbyterian which had enough in our model to be free-standing. The Evangelical Lutheran Church in America “...confess their faith through the three general creeds of Christendom – Apostles’, Nicene, and Athanasian ...also believe that the unaltered Augsburg Confession is a correct exposition...” (pp. 176-177). The Christian Reformed Church began from the Reformed Church in America. They exhibit “...no important differences from accepted Reformed standards” (p. 262). The Reformed Church in America “stand squarely in the tradition of Calvinist thinking” (p. 261). Added to this group was the Moravian Church. According to the guide used in this classification effort, the Moravians “...unified system of doctrine was never developed’.... That may be an overstatement, but it is certainly true that no doctrine is peculiar to them...the church is broadly evangelical....The scriptural interpretations agree substantially with the Apostle’s Creed, the Westminster and Augsburg confessions, and the Articles of Religion of the Church of England” (p. 210). The Moravians could have been included with Presbyterian due to their

mutual adherence to the Westminster Confession as well as common Calvinist roots. However, as Calvinism was also integral in the foundation of the Reform movement and shared other common creeds and confessions with those churches, Moravianism was included with others of the Reformed movement.

Other Protestant (790) – This category included the Churches of Christ, Church of Christ, United Church of Christ, Assemblies of God, Christian and Missionary Alliance, and Interdenominational churches. The Assemblies and Missionary Alliance “have a closely interwoven history, are doctrinally similar, and maintain ties of fellowship” (p. 93). The Churches of Christ “do not consider themselves a denomination, have[ing] no formal organization other than that of each local congregation...” (p. 98). These churches “...stress the divinity of Christ, the authority of the Bible, the indwelling of the Holy Spirit for the believer, future reward or punishment, and God as a loving, prayer-answering deity” (p. 98). With that background it seemed appropriate to group together these denominations.

Appendix D

Specific Denominations in Each Affiliation Grouping

<u>HED Code</u>	<u>SHAFFIL</u>	<u>Description</u>	<u>Institution Counts</u>
12	120	State	13
21	210	Independent–No Affiliation	31
21	211	Independent–Catholic	8
21	212	Independent–Protestant	10
30	300	Roman Catholic	27
	540	Baptist	6
54		Baptist	
75		Southern Baptist	
41		Free Will Baptist Church	
52		American Baptist	
66	660	Presbyterian Church, (U.S.A.)	6
	690	Anabaptist	11
69		Mennonite Church	
43		Mennonite Brethren Church	
58		Church Of The Brethren	
70		General Conference Mennonite Church	
84		United Brethren Church	
87		Missionary Church	
98		Fellowship of Grace Brethren Churches	
65		Friends	

Specific Denominations in Each Affiliation Grouping – continued

<u>HED Code</u>	<u>SHAFFIL</u>	<u>Description</u>	<u>Institution Counts</u>
	710	Methodist and Nazarene	8
59		Church Of The Nazarene	
71		United Methodist	
64		Free Methodist	
	970	Lutheran, Reformed and Moravian	6
97		Evangelical Lutheran Church In America	
35		Christian Reformed Church	
49		Reformed Church In America	
44		Moravian Church	
	790	Other Protestant	7
74		Churches Of Christ	
56		Church Of Christ	
76		United Church Of Christ	
27		Assemblies Of God Church	
34		The Christian And Missionary Alliance	
42		Interdenominational	
Totals			133

Appendix E

2002 CSS/CIRP Questions of Possible Interest in This Study

A. CSS Items:

<u>CSS Item Code</u>	<u>Description</u>	<u>Utilization Comment</u>
CSSACE	College (ACE) I.D	Affiliation cross-reference completed by HERI
ENTER1ST	Year entered first college	Not used – CIRP year (SIFYEAR)
ENTERCUR	Year entered this college	Not used – CIRP year (SIFYEAR) coupled with SAMEACE
CSSSEX	Your Sex	Not used
DEGEARN	Will earn degree by June 2002	Not used
CSSASP	Plan to complete any institution	Not used
SATIS28	Satisfaction with overall college experience at this college	Not used
ENROLL02	Enrollment Status	Used for selection of subjects (1 = full- time undergraduate)
COLLGPA	College GPA	Not used
CSSPOLVW	Political views	Not used
CSSRCES1-9	Ethnic background	Not used

A. CSS Items – continued

CSS Item Code	Description	Utilization Comment
GENACT06	Last year attended a religious service	Important indicator
GENACT15	Last year discussed religion	Important indicator
CSSHWP15	Hours per week prayer/meditation	Important indicator
SLFCHG07	Comparison to start of college– religious beliefs and convictions	Important indicator
CSSOBJ15	Importance of developing a meaningful philosophy of life	Not used
CSSRELIG	Current religious preference	Important variable
CSSRAT17	Compared to average person your age – spirituality	Important indicator
CSSRAT20	Compared to average person your age – religiousness/religiosity	Important indicator
RESPTYPE	Respondent type – years attended	Not used

B. CIRP Items:

CSS Item Code	Description	Utilization Comment
SIFFLAG	Data from CIRP present	Used for subject selection
SAMEACE	CIRP data from same institution	Used for subject selection
SIFYEAR	CIRP survey year	Used for subject selection

B. CIRP Items – continued

CSS Item Code	Description	Utilization Comment
PARSTAT	Parent status: deceased, divorced, living apart, living together	Not used
INCOME	Parent's income last year	Not used
SIFRELIG	Your religious preference	Important variable
FRELIG	Father's religion	Not used
MRELIG	Mother's religion	Not used
SIFRAT17	Compared to average person your age – spirituality	Important indicator
SIFSTRAT	CIRP–College Stratification	Not used – SHAFFIL instead
SIFACT03	Last year attended a religious service	Important indicator
SIFACT07	Last year discussed religion	Important indicator
SIFHPW11	Hours per week prayer/meditation	Important indicator
CHOOSE14	Attracted by the religious affiliation/orientation of the college	Not used
DISTHOME	Miles from permanent home	Not used

B. CIRP Items – continued

<u>CSS Item Code</u>	<u>Description</u>	<u>Utilization Comment</u>
PLANLIVE	Plan to live with parents, other private home, college dorm fraternity/sorority, other campus housing or elsewhere	Not used
SIFOBJ08	Importance of developing a meaningful philosophy of life	Not used
SIFPOLVW	Political views	Not used

Appendix F

Explanation of Ranges Provided in Table 3 Using CSS/CIRP Items

Variable	Formula	Formula Item Scale(s)
Change in Religious Service/Church Attendance		
ATTSVCHG	GENACT06 - SIFACT03	1 – Not at all 2 – Occasionally 3 – Frequently
Change in Prayer/Meditation		
PRYMDCHG	CSSHPW15 - SIFHPW11	1 = None 2 = < 1 hour per week 3 = 1 to 2 hours per week 4 = 3 to 5 hours per week 5 = 6 to 10 hours per week 6 = 11 to 15 hours per week 7 = 16 to 20 hours per week 8 = > 20 hours per week
Change in Discussion of Religion		
RLGDSCHG	GENACT15 - SIFACT07	1 – Not at all 2 – Occasionally 3 – Frequently

Explanation of Ranges Provided in Table 3 Using CSS/CIRP Items – continued

Variable	Formula	Formula Item Scale(s)
Change in Spirituality		
SPIRTCHG	CSSRAT17 - SIFRAT17	1 = Lowest 10%
		2 = Below average
		3 = Average
		4 = Above average
		5 = Highest 10%
Change in Religious Beliefs and Convictions		
SLFCHG07	as marked by respondent	1 = Much weaker
		2 = Weaker
		3 = No change
		4 = Stronger
		5 = Much stronger
Religiousness/Religiosity Compared to Average Person Your Age		
CSSRAT20	as marked by respondent	1 = Lowest 10%
		2 = Below average
		3 = Average
		4 = Above average
		5 = Highest 10%

Appendix G

Appendix Table G₁Religiosity Composite Change by Incoming Religion–State

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance Effect Size
Buddhist	30	-.42 _{ab}	.48	
Mormon (LDS)	8	-.35 _{ab}	.81	
Episcopal	19	-.26 _{ab}	.59	
Eastern Orthodox	8	-.18 _{ab}	.42	
Lutheran	58	-.16 _{ab}	.47	
None	258	-.15 _{ab}	.52	
Roman Catholic	341	-.12 _{ab}	.57	
Other Religion	48	-.09 _{ab}	.52	
Methodist	72	-.08 _{ab}	.58	
Jewish	30	-.02 _{ab}	.59	
Other Christian	180	.00 _{ab}	.72	
Church of Christ	29	.01 _{ab}	.49	
Presbyterian	60	.01 _{ab}	.74	
Baptist	152	.01 _{ab}	.58	
<u>Seventh Day Adv.</u>	<u>6</u>	<u>.34_b</u>	<u>.79</u>	
Total	1325	-.09	.59	<i>F</i> (16,1308) = 2.144
				<i>p</i> = .005 η = .1599

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₂Religiosity Composite Change by Incoming Religion–Independent No Affiliation

<u>Student Religion</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Church of Christ	61	-.27 _a	.51		
Buddhist	29	-.23 _a	.61		
Episcopal	183	-.23 _a	.54		
Quaker	15	-.19 _a	.87		
Methodist	279	-.15 _a	.67		
Lutheran	185	-.15 _a	.55		
Eastern Orthodox	34	-.14 _a	.54		
Roman Catholic	1350	-.14 _a	.58		
None	840	-.14 _a	.54		
Presbyterian	251	-.14 _a	.60		
Jewish	171	-.13 _a	.60		
Other Religion	164	-.13 _a	.69		
Mormon (LDS)	12	-.09 _a	.66		
Islamic	23	-.08 _a	.59		
Other Christian	386	-.07 _a	.64		
<u>Baptist</u>	<u>231</u>	<u>.02_a</u>	<u>.64</u>		
Total	4216	-.13	.59	$F(16,4199) = 1.946$	
				$p = .013$	$\eta = .0858$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₃Religiosity Composite Change by Incoming Religion–Independent Catholic

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Episcopal	20	-.39 _a	.49		
Jewish	8	-.22 _a	.45		
Presbyterian	58	-.11 _a	.52		
Other Christian	96	-.10 _a	.50		
None	182	-.08 _a	.57		
Lutheran	41	-.08 _a	.50		
Church of Christ	12	-.06 _a	.74		
Buddhist	19	-.04 _a	.72		
Roman Catholic	1051	-.04 _a	.57		
Baptist	42	-.03 _a	.80		
Methodist	26	.01 _a	.55		
Other Religion	32	.03 _a	.65		
Eastern Orthodox	12	.08 _a	.45		
<u>Islamic</u>	8	.21 _a	.36		
Total	1626	-.05	.57	$F(16,1599) = .996$	
				$p = .46$	$\eta = .0993$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₄Religiosity Composite Change by Incoming Religion–Independent Protestant

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Episcopal	15	.09	.49		
Church of Christ	33	.21	.44		
Lutheran	31	.26	.60		
Roman Catholic	60	.28	.53		
None	43	.33	.65		
Other Christian	584	.36	.49		
Methodist	68	.40	.49		
Presbyterian	94	.40	.46		
Baptist	214	.43	.03		
Other Religion	24	.51	.57		
<u>Buddhist</u>	<u>5</u>	<u>.65</u>	<u>.72</u>		
Total	1182	.37	.50	$F(16,1165) = 1.931$	
				$p = .015$	$\eta = .1628$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₅Religiosity Composite Change by Incoming Religion–Roman Catholic

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Seventh Day Adv.	5	-.34 _a	.45		
Quaker	12	-.31 _a	.57		
Jewish	19	-.15 _a	.80		
Church of Christ	30	-.14 _a	.54		
Buddhist	18	-.10 _a	.68		
Episcopal	52	-.08 _a	.63		
Lutheran	125	-.05 _a	.57		
Roman Catholic	3155	-.04 _a	.57		
Other Christian	204	-.03 _a	.61		
Methodist	129	-.03 _a	.66		
Eastern Orthodox	51	-.02 _a	.52		
Presbyterian	90	-.02 _a	.68		
None	261	.01 _a	.58		
Other Religion	82	.02 _a	.59		
Baptist	87	.10 _a	.47		
<u>Islamic</u>	<u>16</u>	<u>.21_a</u>	<u>.60</u>		
Total	4340	-.03	.58	$F(16,4323) = .997$	
				$p = .457$	$\eta = .0606$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₆Religiosity Composite Change by Incoming Religion–Baptist

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Roman Catholic	8	.11	.49		
Presbyterian	9	.16	.68		
None	6	.21	.37		
Other Christian	119	.28	.39		
Methodist	10	.31	.60		
Baptist	171	.38	.48		
Lutheran	29	.43	.58		
<u>Other Religion</u>	8	.48	.36		
Total	367	.33	.48	$F(11,355) = 1.696$	
				$p = .072$	$\eta = .2235$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₇Religiosity Composite Change by Incoming Religion–Presbyterian

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Lutheran	24	-.26	.82		
Episcopal	54	-.22	.53		
Church of Christ	10	-.19	.76		
Roman Catholic	104	-.09	.65		
None	51	-.04	.59		
Baptist	67	-.03	.69		
Other Christian	55	-.01	.52		
Presbyterian	129	-.00	.62		
Methodist	92	.03	.65		
<u>Other Religion</u>	9	.05	.63		
Total	605	-.05	.63	$F(14,590) = 1.195$	
				$p = .275$	$\eta = .1660$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₈Religiosity Composite Change by Incoming Religion–Anabaptist

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Other Religion	44	-.03	.73		
Roman Catholic	30	.04	.61		
Church of Christ	13	.10	.50		
Presbyterian	23	.17	.43		
Methodist	41	.17	.52		
None	17	.17	.68		
Other Christian	403	.18	.53		
Lutheran	28	.18	.65		
Quaker	8	.19	.60		
<u>Baptist</u>	<u>66</u>	<u>.30</u>	<u>.43</u>		
Total	684	.16	.56	$F(14,669) = 2.802$	
				$p < .001$	$\eta = .2354$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₉Religiosity Composite Change by Incoming Religion—Methodist and Nazarene

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Roman Catholic	14	-.27	.55		
None	13	.11	.48		
Methodist	33	.13	.66		
Baptist	43	.17	.63		
Other Religion	23	.24	.65		
Lutheran	5	.27	.27		
Presbyterian	22	.27	.30		
Church of Christ	6	.30	.22		
<u>Other Christian</u>	<u>206</u>	<u>.30</u>	<u>.47</u>		
Total	372	.23	.53	$F(12,359) = 2.278$	
				$p = .009$	$\eta = .2660$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₁₀Religiosity Composite Change by Incoming Religion–Lutheran and Reformed

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Other Religion	7	-.30	.40		
Episcopal	5	-.25	.55		
Roman Catholic	54	-.20	.64		
Lutheran	79	.00	.63		
Baptist	26	.00	.50		
Church of Christ	8	.01	.73		
Presbyterian	33	.18	.50		
None	12	.19	.66		
Other Christian	162	.19	.49		
<u>Methodist</u>	<u>21</u>	<u>.22</u>	<u>.62</u>		
Total	413	.07	.57	$F(12,400) = 2.838$	
				$p = .001$	$\eta = .2801$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₁₁Religiosity Composite Change by Incoming Religion—Other Protestant

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Lutheran	13	.17	.77		
Methodist	12	.18	.55		
Roman Catholic	23	.19	.88		
Baptist	41	.21	.41		
Church of Christ	36	.22	.45		
Other Religion	23	.23	.37		
Presbyterian	14	.31	.62		
Other Christian	272	.36	.44		
None	10	.63	.87		
Total	449	.31	.50	$F(12,436) = 1.245$	
				$p = .250$	$\eta = .1820$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₁₂Religiosity Composite Change by Incoming Religion–State & Independent No

<u>Student Religion</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Buddhist	59	-.33 _a	.55		
Quaker	17	-.24 _{ab}	.83		
Episcopal	202	-.23 _{ab}	.54		
Mormon (LDS)	20	-.20 _{ab}	.71		
Church of Christ	90	-.18 _{ab}	.52		
Lutheran	243	-.15 _{ab}	.53		
Eastern Orthodox	42	-.15 _{ab}	.51		
None	1118	-.14 _{ab}	.54		
Methodist	351	-.14 _{ab}	.65		
Roman Catholic	1691	-.14 _{ab}	.58		
Other Religion	212	-.12 _{ab}	.65		
Jewish	201	-.12 _{ab}	.60		
Presbyterian	311	-.11 _{ab}	.63		
Islamic	27	-.08 _{ab}	.58		
Other Christian	566	-.05 _{ab}	.67		
Baptist	383	.02 _{ab}	.62		
<u>Seventh Day Adv.</u>	<u>8</u>	<u>.11_b</u>	<u>.80</u>		
Total	5541	-.12	.59	$F(16,5524) = 3.183$	
				$p < .001$	$\eta = .0956$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table G₁₃Religiosity Composite Change by Incoming Religion—Catholic & Indep. Catholic

<u>Student Religion</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>F-test/significance</u>	<u>Effect Size</u>
Quaker	15	-.31 _a	.55		
Jewish	27	-.17 _{ab}	.70		
Episcopal	72	-.17 _{ab}	.61		
Seventh Day Adv.	9	-.14 _{ab}	.44		
Church of Christ	42	-.12 _{ab}	.60		
Buddhist	37	-.07 _{ab}	.69		
Lutheran	166	-.06 _{ab}	.55		
Presbyterian	148	-.05 _{ab}	.62		
Other Christian	300	-.05 _{ab}	.57		
Roman Catholic	4206	-.04 _{ab}	.57		
None	443	-.03 _{ab}	.58		
Methodist	155	-.02 _{ab}	.64		
Eastern Orthodox	63	-.00 _{ab}	.51		
Other Religion	114	.02 _{ab}	.60		
Baptist	129	.06 _{ab}	.60		
Mormon (LDS)	6	.15 _{ab}	.51		
<u>Islamic</u>	<u>24</u>	<u>.21_b</u>	<u>.52</u>		
Total	5956	-.04	.58	$F(16,5939) = 1.273$	
				$p = .205$	$\eta = .0585$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix H

Appendix Table H₁Religiosity Composite Change by Incoming Religion– No CCCU Membership

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance Effect Size
Quaker	32	-.27 _a	.70	
Episcopal	342	-.22 _a	.56	
Buddhist	102	-.19 _{ab}	.65	
Jewish	234	-.12 _{ab}	.61	
Church of Christ	179	-.11 _{ab}	.56	
Lutheran	527	-.10 _{ab}	.58	
None	1667	-.10 _{ab}	.56	
Eastern Orthodox	113	-.09 _{ab}	.51	
Methodist	646	-.07 _{ab}	.65	
Other Religion	350	-.07 _{ab}	.64	
Presbyterian	622	-.07 _{ab}	.62	
Roman Catholic	6117	-.06 _{ab}	.58	
Other Christian	1036	-.03 _{ab}	.63	
Seventh Day Adv.	19	-.01 _{ab}	.62	
Mormon (LDS)	30	.01 _{ab}	.76	
Baptist	643	.02 _{ab}	.62	
<u>Islamic</u>	55	.09 _b	.57	
Total	12714	-.07	.59	<i>F</i> (16,12697) = 4.010 <i>p</i> < .001 $\eta = .0709$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

Appendix Table H₂Religiosity Composite Change by Incoming Religion–CCCU Membership

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Episcopal	13	.14 _{abc}	.56		
Roman Catholic	73	.19 _{abcd}	.63		
Other Religion	114	.21 _{abcd}	.62		
Church of Christ	62	.23 _{abcd}	.45		
Quaker	16	.26 _{abcd}	.60		
Other Christian	1631	.30 _{abcd}	.48		
Lutheran	91	.31 _{abcd}	.60		
Methodist	137	.32 _{abcd}	.52		
Presbyterian	161	.36 _{abcd}	.44		
Baptist	497	.39 _{abcd}	.44		
None	46	.46 _{bcd}	.49		
<u>Eastern Orthodox</u>	<u>6</u>	<u>.79_{cd}</u>	<u>.80</u>		
Total	2855	.31	.49	<i>F</i> (14,2840) = 3.388	
				<i>p</i> < .001	$\eta = .1282$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison. Religious preferences with less than five respondents were not specified but are included in the totals.

Appendix Table H₃Religiosity Composite Change by Incoming Religion—No NACCAP Membership

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Quaker	32	-.27 _a	.70		
Episcopal	343	-.22 _{ab}	.56		
Buddhist	102	-.19 _{abc}	.65		
Jewish	234	-.12 _{abc}	.61		
Lutheran	531	-.10 _{abc}	.58		
None	1676	-.09 _{abc}	.56		
Eastern Orthodox	113	-.09 _{abc}	.51		
Methodist	657	-.06 _{abc}	.65		
Roman Catholic	6140	-.06 _{abc}	.58		
Presbyterian	636	-.06 _{abc}	.62		
Church of Christ	210	-.05 _{abc}	.56		
Other Religion	378	-.05 _{abc}	.63		
Seventh Day Adv.	20	.02 _{abc}	.62		
Baptist	670	.03 _{bc}	.61		
Other Christian	1254	.03 _{bc}	.62		
Mormon (LDS)	31	.03 _{bc}	.76		
<u>Islamic</u>	<u>55</u>	<u>.09_c</u>	<u>.57</u>		
Total	13082	-.06	.59	$F(16,13065) = 5.765$	
				$p < .001$	$\eta = .0837$

Note. Means having the same subscript are not statistically different from each other at $p < .05$ in the Tukey honestly significant difference comparison.

Appendix Table H₄Religiosity Composite Change by Incoming Religion–NACCAP Membership

Student Religion	N	Mean	S.D.	<i>F</i> -test/significance	Effect Size
Episcopal	12	.12	.57		
Church of Christ	31	.18	.47		
Other Religion	86	.22	.68		
Quaker	16	.26	.60		
Roman Catholic	50	.28	.69		
Other Christian	1413	.30	.48		
Lutheran	87	.33	.58		
Methodist	126	.33	.51		
Presbyterian	147	.36	.43		
Baptist	470	.40	.44		
None	37	.41	.47		
<u>Eastern Orthodox</u>	<u>6</u>	<u>.79</u>	<u>.80</u>		
Total	2487	.32	.49	$F(14,2472) = 3.450$	
				$p < .001$	$\eta = .1384$

Note. Tukey honestly significant difference comparison for homogenous subsets was not performed because a number of groups had fewer than two cases. Religious preferences with less than five respondents were not specified but are included in the totals.