Religiosity in Middle Adulthood Among Alumni of U.S. Jesuit Higher Education: Strength of Religious Faith and the Role of Undergraduate High Impact Practices

Author: Charles Cownie

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Boston College
Lynch School of Education and Human Development

Department of
Educational Leadership and Higher Education

RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION: STRENGTH OF RELIGIOUS FAITH AND THE ROLE OF UNDERGRADUATE HIGH IMPACT PRACTICES

Dissertation
by

CHARLES COWNIE

submitted in partial fulfillment
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RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION

Abstract

U.S. Jesuit Catholic universities are called not only to be excellent academic institutions but also to carry out a mission to educate and form "students in such a way and in order that they may become men and women of faith and of service to their communities" (Association of Jesuit Colleges and Universities, 2012, p. 3). This formative goal calls Jesuit institutions to engage in practices that provide students with experiences that support the continued growth of a strong and engaged religious faith. Based on the American Association of Colleges & Universities' nine high impact practices and seven additional Jesuit Catholic high impact practices, this study investigated the relationship between individuals' engagement in these specific high impact practices and their middle adult religiosity or strength of religious faith. In this research, 483 alumni from 16 Jesuit colleges and universities reported high levels of religiosity in middle adulthood, as measured by the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997b). Descriptive statistics and OLS multiple regression analysis showed a statistically significant, positive relationship between adult religiosity and participants' engagement in Jesuit Catholic high impact practices as undergraduates, both across practices and specifically associated with participation in the Jesuit practice of the Examen of Conscience.

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CHAPTER 1

Much of United States higher education is actively engaged in examining the economic benefit of a college degree. The assumption that the purpose of higher education is career preparation drives this effort. An assumption that drives U.S. Jesuit higher education, however, is the explicit engagement in the formation of people of faith. Curricular, co-curricular, and extra-curricular efforts at each of these 27 Catholic liberal arts institutions strive to impact the strength of faith and engagement in that faith among their graduates. Yet, despite this clear purpose, little research has examined the potential impact of college practices at the undergraduate level on the faith lives of its graduates.

What is the purpose of higher education and how do we know if the purpose is being achieved? The best answer to these questions is also the least satisfying: it depends on the institution. The perspective and positionality of the institution strongly impacts the difference in the answer. The focus of this dissertation is to explore the response of U.S. Jesuit Catholic higher education to the questions: a) What is the university's purpose?; and b) Is this purpose is being achieved through the specific curricular, co-curricular, and extra-curricular efforts engaged in at these universities. This work proposes that these institutions have, as a group, chosen a mission that ties their very success to the lived faith lives of their alumni. Therefore, measuring religiosity of alumni, in comparison to pre-college levels, offers a specific tool for assessing this outcome for these institutions. Additionally, knowing which experiences in the Jesuit higher education most closely correlate with greater strength of faith may provide guidance for where it is best for these institutions to focus their efforts in order to best reach this desired outcome.

Purpose of U.S. Higher Education

For a considerable period in the history of the United States, many have argued that the purpose of higher education was to enculturate and maintain the significant social benefit of democracy (Brand, 2010; Brubacher & Rudy, 2004; Dewey, 1998; Gutmann, 1987; The Institute for Higher Education Policy, 1998). Others observed that this social benefit existed in parallel to the individual benefit of helping students develop of a meaningful philosophy of life (Astin, Astin, & Lindholm, 2011). These high-minded goals no longer have the priority that they once had.

Currently, more students privilege financial success and security over a meaningful life philosophy (Astin et al., 2011). Correlated with this change in students' goals has been the movement to evaluate colleges by the economic impact they have on students and society. These efforts have motivated colleges, higher education professional organizations, for profit researchers, and other institutions to identify graduates' salaries, rates of employment, percentages of those repaying college loans, and other economic factors as the most important outcomes. As a result, these economic outcomes now have a place of priority in U.S. higher education and have become, to many, the very purpose of college and university education.

Measuring Outcomes of U.S. Higher Education

Currently, there exists a variety of measures for assessing U.S. higher education outcomes. Each measure reflects a unique perspective on the most important function high education should fulfill.

In 2009, President Obama set the goal for the U.S. to have the "best-educated, most competitive workforce in the world" by 2020 (p. 1). According to Obama, this would be achieved when the U.S. once again had the highest percentage of college graduates in the world. Obama is

not the first person to tether the mission and goals of higher education to jobs for individuals and market growth for the U.S., but he certainly advanced this perspective through both his rhetoric and the 2015 launching of the College Scorecard.

The College Scorecard seeks to support potential college students, or "consumers," in identifying which college is the best fit for them (Coughlin, Laguilles, Kelly, & Walters, 2016). Though the Scorecard offers much data on schools, it highlights most prominently individual college average costs, graduation rates, and average salaries after completion (U.S. Department of Education, 2017).

The survey giant Gallup, Inc., added a layer to President Obama's and the College Scorecard's perspective, by asserting that getting good jobs leads to a happy life (2014). Citing the Cooperative Institutional Research Program, Gallup claims that the primary reasons Americans go to college is to prepare for and then get a good job.

Adding to these perspectives on the purposes and most meaningful outcomes of higher education, are the Post-Collegiate Outcomes initiative (PCO) and the Liberal Education and America's Promise initiative (LEAP). Led by the American Association of Community Colleges (AACC) in partnership with the Association of Public and Land-grant Universities (APLU) and the American Association of State Colleges and Universities (AASCU), the purpose of the PCO effort is to develop a framework for examining the value and outcomes of U.S. higher education (The American Association of Community Colleges American Association of State Colleges and Universities and Association of Public and Land-Grant Universities, 2015). Visually and theoretically, this model identifies four quadrants of outcomes of higher education: public/economic; personal/economic; public/social capital; and personal/social capital. This model not only prioritizes factors assessed in the college Scorecard and the Gallup, but also

includes civic engagement (including voting and volunteer activities) of graduates as an important outcome. Liberal Education and America's Promise initiative (LEAP) goes a step further than the PCO.

LEAP is an effort by the American Association of Colleges and Universities (AACU) to advance liberal education and provide a framework for assessing liberal education. The AACU specifically focuses efforts on these stated essential learning outcomes (Association of American Colleges and Universities, 2005). The LEAP effort has also developed rubrics for assessing students' achievement of essential learning outcomes during undergraduates' college or university experiences (Association of American Colleges and Universities, 2009). Though the LEAP effort has been able to measure what the researchers have classified as authentic student learning (Coughlin et al., 2016), data gathering is limited to students' time as undergraduates.

Though the efforts of LEAP and PCO are significant in looking beyond scoring colleges on the economic impact on individuals upon graduation, none of these efforts is able to adequately assess the outcomes of a U.S. Jesuit College or University education. These efforts fail Jesuit higher education because they do not assess the impact on individuals' faith lives, which is the foundational goal of the founder of the Jesuits and continues to have a privileged place in the mission of these institutions.

U.S. Jesuit Catholic Higher Education's Uniqueness and Similarity

A unique subset of U.S. higher education, Jesuit Catholic higher education has also struggled with purpose and assessment of outcomes of its matriculants, in spite of U.S. Jesuit higher education's faith-based goal for graduates. Founded by the Roman Catholic men's religious order the Society of Jesus (Jesuits), this group of 27 institutions of higher education

share a common mission to form the values, ethics, and morals of students in a way that encourages participants' growth in faith lives through engagement in continuing faith formation.

On July 15, 2015, in advance of Pope Francis' visit to the U.S., the Association of Jesuit Colleges and Universities (AJCU) began a social media campaign (#jesuiteducated) seeking to highlight how Jesuit education has transformed their graduates. Over the next several months, individuals submitted personal stories of how they were transformed by their experience of Jesuit education. Interspersed with entries submitted by the general rank and file of alumni are entries of notable alumni educated at AJCU. Based on the entries of notable alumni, the AJCU makes the claim that Jesuit-educated individuals are prepared for an active faith life that includes a commitment to service, like Pope Francis. Yet, this claim is grounded in the brief narratives of a small, and not necessarily representative sample of the more than 2,059,811 alumni of these institutions (AJCU, 2017). This method of examining the impact of these institutions on the lives of their graduates is both exciting and inspiring, but it offers only a small chapter of a larger narrative of the alumni of these institutions.

Jesuit higher education, as both Jesuit and Catholic, considers itself called to intentionally offer a different education than secular public or private education. To be clear, modern Jesuit Catholic universities share the call of other American institutions of higher education to "peer reviewed research, research-grounded teaching and teaching as mentoring, and service, all within a climate of academic freedom" (AJCU, 2012, p. 3). However, the stated mission of Jesuit Catholic higher education also includes "the education and formation of students in such a way and in order that they may become men and women of faith and of service to their communities" (p. 3). Within Jesuit institutions of higher education "students are engaged in a process of exploring the distinctive and constructive ways in which their knowledge and talents will best

serve society" (AJCU, 2017a, p. 13). Engaging students in this process requires selection of curricular, co-curricular, and extra-curricular efforts, or high-impact practices that speak to both their identity as Catholic liberal institutions and Jesuit institutions. Situating the mission of these institutions and corresponding high-impact practices in this context necessarily calls upon these institutions to hold themselves accountable to a standard that is intentionally different from other institutions of American higher education.

Despite both the stated goal of engaging in individual faith formation in preparation of post-graduate faith life, and a definitive claim that the success of these institutions is dependent upon the post-graduate lives of their alumni, no comprehensive questioning of alumni regarding their undergraduate experience or their adult faith life has occurred. While these institutions count many exceptional individuals among their alumni, it is unclear whether these individuals are the rule or the exception.

Identifying the strength of religious faith of alumni of U.S. Jesuit higher education and the experiences that support this strengthening of religious faith is important to the future of Jesuit higher education. With increased attentiveness to the cost and benefits of higher education to students, families, and the general public, it is essential for institutions of Jesuit higher education in the United States to explain clearly and convincingly what makes them unique among higher education and how that unique education makes a difference in the lives of graduates. This is particularly important for Jesuit Catholic higher education because their desire to impact the lives of their graduates speaks directly to their mission of more than 450 years.

This dissertation gathered data to address two primary areas:

1. The strength of religious faith (religiosity) of middle-adult alumni of U.S. Jesuit higher education in comparison to pre-college level of religiosity; and

2. Levels of participation in specific "high-impact" Jesuit undergraduate educational experiences.

I then analyzed the relationship between strength of religious faith of middle adult alumni of U.S. Jesuit higher education and "high-impact" undergraduate educational experiences. This research has the potential to support additional in-depth research on individual practices that have initially indicated a potentially significant relationship with alumni strength of religious faith or religiosity.

Throughout this dissertation the construct of religiosity is discussed as the dependent variable of interest. Religiosity is defined as strength of religious faith (Plante & Boccaccini, 1997a). The construct of religiosity and the relationship of religiosity to the mission of Jesuit higher education are discussed with greater depth in the following chapter. For clarity, religious in this dissertation is defined as a belief in an acknowledged system of "beliefs, principles or doctrines related to a belief in and worship of a supernatural power or powers regarded as creator(s) and governor(s) of the universe" (Love, 2001, p. 8). Faith refers to religious faith and is conceptualized as the awareness of divinity and the adoption of attitudes and behaviors that act upon that awareness (Cutting & Walsh, 2008).

CHAPTER 2

Since the 1599 official sanctioning of the Jesuit *Ratio Studiorum*, or plan of studies, Jesuit education has explicitly planned and engaged in spiritual formation and high-quality liberal arts education (Society of Jesus, 1599). Today, U.S. Jesuit higher education continues this over 400-year-old mission. To carry on this mission, U.S. Jesuit colleges and universities have assumed a pedagogical approach that has at its foundations the spirituality of the founder of the Jesuits, Ignatius of Loyola. The core of this spirituality holds that through specific, intentional efforts, individuals are able to deepen their relationship with God, or increase their religiosity. Yet, despite this mission to strengthen religious faith and increase engagement, the effects of these institutional efforts on individuals' later lives of faith have yet to be measured or analyzed.

Measuring the degree to which specific experiences in higher education can potentially impact who students become and how they choose to live their lives is neither novel nor profound, as we currently live in an age when colleges and universities are increasingly asked to quantify their impacts on students. For example, the Association of American College & Universities (AAC&U) believes that liberal education impacts individuals' work, life, and democratic citizenship. Thus, the AAC&U is studying the impact that specific liberal education practices have on the lives of individuals who have engaged in a liberal education. Like Ignatius, the AAC&U holds as a central belief that specific practices can have lasting impacts upon the lives of individuals. However, unlike the AAC&U, Jesuit institutions have yet to a) state explicitly their unique practices; and b) research the outcomes of those practices: a deeper relationship with God.

The reasons that Jesuit institutions have yet to study the effects that their unique institutional practices have on individuals' strength of religious faith, or religiosity, is both

logistical and philosophical. Logistically, it is challenging and even prohibitive to gather of data from a group of 28 universities whose results could only be generalized to their own group. Philosophically, there are at least two potential challenges: 1) Identifying those practices that are incorporated into these institutions that realize the desired outcomes; and 2) Measuring the construct of religiosity in a manner that both incorporates the desired outcomes of Jesuit higher education and best lends itself to gathering data from alumni in a brief, but meaningful, manner. However, AAC&U research on high-impact practices, literature on Jesuit higher education, and Thomas Plante's (Plante & Boccaccini, 1997b) research on religiosity may offer a framework for identifying and gathering data about practices that impact alumni religiosity.

This chapter presents the literature on: 1) the mission and desired outcomes of U.S. Catholic Jesuit higher education; 2) previous efforts at the assessment of the achievement of mission of U.S. Jesuit Catholic higher education; 3) the AAC&U's study of the high-impact practices of liberal education; and 4) the measurement and study of religiosity.

U.S. Jesuit Catholic Higher Education

Speaking at Santa Clara University in 2000, then Superior General of the Jesuits, Peter Hans Kolvenbach, S.J., stated that "the measure of Jesuit universities is not what our students do but who they become and the adult Christian responsibility they will exercise in future towards their neighbor and their world" (p. 8). This statement is grounded in the foundational purpose of Catholic higher education and the specific mission of Jesuit Catholic higher education. In studying the realization of their desired mission of growing individual's religious faith and engagement, understanding the purpose of Catholic higher education as defined by the Catholic Church and the mission of Jesuit higher education as established within the larger context of Catholic higher education and as ministered by the Society of Jesus is critical to this research.

Prior to explaining the Catholic church's defined purpose and the Jesuit's specific manner of enacting this purpose in their American institutions, it is necessary to acknowledge the lack of clarity of the term "faith" in the literature. Faith is often utilized in a variety of ways in research literature, theological writing, and modern American periodicals and public speech without definition. This lack of clarity is exemplified in the definition of faith: "Faith is the realization of what is hoped for and evidence of things not seen" (Heb. 11:1, New American Bible, Revised Edition). Though this definition offers great potential for analysis and philosophical discussion, including a potentially challenging, concept like hope is confusing. In this dissertation, the definition of faith is adapted from the work of Marsha Cutting and Michelle Walsh (2008), which itself is built upon the work of William James (1917). Faith refers to religious faith and conceptualized as the awareness of divinity and the adoption of attitudes and behaviors that act upon that awareness. This definition is broad enough to be inclusive of multiple religious traditions, but also speaks concretely and directly to the active ideal of faith that is present in Ignatian Spirituality and has been implicitly adopted by U.S. Jesuit higher education.

Purpose of U.S. Catholic Higher Education

Kolvenbach foreshadowed the thoughts Pope Benedict shared in his *Address to Catholic Educators* in April of 2008. In his statement at Catholic University of America, in Washington, DC, Benedict called on members of Catholic higher education to actively engage in the formation of young people. He expressed that the purpose of Catholic higher education is unique among the landscape of higher education in the United States. Given that higher education in this country offers diverse opportunities for all citizens, he asks why the Roman Catholic Church should engage in higher education at all. He then responds by stating that the reason that the Catholic Church should participate in higher education in the United States is to engage in students'

formation of intellect and will, which God endows on humans. Supporting students' learning of truth and faith as unified concepts will lead to the formation of individuals who will live their faith.

Speaking about the purpose of higher education from a Catholic perspective, Benedict links truth and faith together as the central purpose of this ministry. The Catholic Church connects the human search for truth with the endowment of reason upon by God (Vatican Council & Catholic Church, 1965). "Consequently, methodical research in all branches of knowledge, provided it is carried out in a truly scientific manner and does not override moral laws, can never conflict with the faith, because the things of the world and the things of faith derive from the same God" (Catholic Church, 1994, p. 159). Thus, it makes sense that Benedict would hold the belief that "young people will surely relish the discovery that the question of what they can know opens up the vast adventure of what they ought to do" (Benedict, 2008, p. 4). Benedict's assertion that all of the efforts of the Catholic institution of higher education to form students intellectually is, in fact, derived from these institutions' greater purpose to grow individuals' strength of religious faith and engagement with that faith.

Benedict's and Kolvenbach's statements supporting the students' strengthening of religious faith and engagement as the purpose of Catholic higher education is grounded in Canon 795 of the *1983 Code of Canon Law*. Canon 795 states that true Catholic education strives for "complete formation of the human person that looks to his or her final end as well as the good of societies." The Catholic Church's 1990 promulgation of *Ex Corde Ecclesiae* offered a focus specifically on Catholic higher education. *Ex Corde* reiterated the right and need of the Catholic church to engage in higher education and also instructed institutions of Catholic higher education to be focused on excellent education and also on the strengthening of religious faith. In this way,

Pope John Paul II believed that the church would prepare men and women of faith for leadership in society and the Catholic church (Paul II, 1990).

Accomplishing this type of faith-formation of individuals in the context higher education requires great attention to the model of education and the essential experiences provided in and out of the classroom. Jesuit institutions are built upon an educational philosophy that demands the vigilant search for truth combined with experiences that offer opportunities for strengthening religious faith.

Mission of U.S. Jesuit Catholic Higher Education

Pope Benedict, the *1983 Code of Canon Law*, and *Ex Corde Ecclesia,* provide a clear articulation of the Roman Catholic Church's formal stance on the purpose and potential of Catholic higher education in the United Sates - seeking truth and strengthening religious faith and engagement in religious faith. As Catholic institutions of higher education, U.S. Jesuit colleges and universities most certainly seek to carry out the purpose of the university as demanded by Catholic church leadership and law. However, at the same time, the unique history and rich tradition of the Jesuits pose a concrete approach which enacts this higher educational purpose and inspires the mission of U.S. Jesuit higher education.

U.S. Jesuit higher education is the extension of an educational model developed over more than 450 years founded by Ignatius, who saw the mission of the Society of Jesus as saving souls. Taken together, the *Constitutions of the Society of Jesus* and the *Spiritual Exercises,* provide a strong basis for the method and manner in which Jesuit institutions of higher education should engage in higher education.

The *Formula of the Institute of the Society of Jesus* introduces the Jesuit Constitution. It was first approved by Pope Paul III in 1540 and then reapproved, with some edits, by Pope Julius

III in 1550. The *Formula* notes that those joining the society should clearly understand that they are joining an order that has at its mission the protection and spreading of the Christian faith and the growth of the Christian life and teaching. This mission, it notes, shall be carried out "according to what will be expedient for the Glory of God and the common good" (Jesuits & Ignatius, 1996, p. 4). David Hollenbach draws specific attention to the interconnection of the glory of God and the common good as epitomizing Ignatius' religious view of combining "a commitment to God-the Glory of God-and a commitment to human well-being" (2016, p. 174). Ignatius' view that faith is grown through a seemingly dual commitment to God and human beings ought to be seen as a commitment to supporting individuals in building a relationship with God. This idea is witnessed in the *Spiritual Exercises* of Ignatius.

Ignatius developed The *Spiritual Exercises* as a set of instructions for an individual to deepen their relationship with God (Donnelly, 1994). The *Exercises* hold as foundational that a true and personal relationship with God is possible (Hollenbach, 2016). This commitment to the growth of faith in individuals forms the very premise of Ignatius' words and, in turn, the Jesuits'. The *Spiritual Exercises* hold at their core a clear process for guiding individuals in growing their strength of faith. Viewing Ignatius' *Exercises* in this way reiterates the foundational mission of the Jesuits: strengthening of religious faith and engagement in that faith. Jesuit Kevin O'Brien has noted that the *Exercises* should be central to U.S. Jesuit higher education (2015). O'Brien's stance recalls the *Formula* of 1550 and specifically connects this work to the purpose of Jesuit efforts in U.S. higher education. Furthermore, it clearly connects the *Spiritual Exercises* to the modern Jesuit works in higher education.

The foundational aspects of the *Formula* and the *Exercises* in U.S. Jesuit higher education gives context to Charles Currie's (2010) argument that the ability of a Jesuit Catholic institution

to live up to its mission can and should be judged by its ability to strengthen students' religious faith and engage them in their faith in a way that serves society. Currie, a Jesuit and former President of AJCU, holds that the strengths built into U.S. Jesuit universities offer the opportunity and responsibility to transform the world through efforts to strengthen students' relationship with God. He finds this to be the purpose of Jesuit institutions' continuing and sustained efforts to strengthen students' religious faith.

The *Formula,* the *Exercises,* Currie, and Kolvenback each give voice to the defined mission of these U.S. Jesuit institutions and to the core belief that it is possible that individuals can be formed as people of faith over the course of completing a college education. This is not to say that these institutions are not concerned with the formation of the intellect, but rather that, as former Jesuit Superior Adolfo Nicolas (2010) has stated, the growth of the intellect is in service to the goal of strengthening the faith and engagement in that faith of those who participate in this specific type of education.

Jesuit Mission and the Intellectual Apostolate

In their 1995 34th General Congregation, the Jesuits reaffirmed their commitment to learned ministry or the intellectual apostolate and to the educational legacy of their founder as an essential method of carrying out the mission of the Society. This educational legacy supports humanity in "their intellectual projects, their critical perspectives on religion, truth, and morality, their whole scientific and technological understanding of themselves and the world in which we live" (Society of Jesus, 1995, p. 4.25). Concerned that the terms *learned ministry* and *intellectual apostolate* would become little more than "Jesuit jargon," in 2010 Jesuit Superior Adolfo Nicolas noted that Jesuit higher education must engage in the "rigorous exercise of the intellect" (Nicolas, 2010, p. 9). However, the production of knowledge at the Jesuit university must always be "in the

service of the faith." This is to say that Jesuit higher education holds as foundational that the academic and the religious are inextricably related and "if allowed their full development, the religious intrinsically involves the academic, and the academic intrinsically involves the religious" (Buckley, 1993, pg. 4). And, both must be excellent!

As an apostolate of the Society of Jesus, the full development of Jesuit higher education connects the growth of religious faith and the intellect and demands excellence in both individually and together. Reflecting this in his own life, Ignatius showed great commitment to both spiritual and academic excellence (Loyola, 1900/1553). His dual commitment to spiritual and academic excellence was likely due to his belief that, as Pope John Paul II (1990) and Frank Rhodes (1989) have both similarly stated, all of creation is the work of Christ and excellence glorifies God. As such, Jesuit insititutions of higher education, as a primary modern ministry of Ignatius' Society of Jesus, must illustrate a passion for academic excellence as "Excellence is important" (Mitchell, 2008, p. 111). The creation of institutional environments which demand and support excellence is essential to the mission of formation of students of faith for the benefit of society (Barkan, 1990). As Kolvenbach states, "only excellence is apostolic" (Kolvenbach, 1989, p. 83). It is this excellence in the university's academic areas that encourages students to come to know the authentic truths of this world that will allow them to continue to strengthen their religious faith, which the Jesuits believe will support individuals' commitment to God and fellow humans (Brackley, 1999; Kolvenbach, 2000; Nicolas, 2013).

The continuing commitment to an intellectual apostolate engaged in the strengthening of religious faith, is a restatement of the commitment to the continuation of Jesuit education as Ignatius imagined. For the modern American institutions of Jesuit higher education, continuing to identify themselves as Jesuit institutions is to continue this commitment to this mission carried

out in a specific manner. Despite challenges each of the 28 U.S. Jesuit institutions of higher education continues to identify itself as Jesuit and engage in this mission. Despite differing institutional histories and contexts, each institution shares this mission.

A brief history of Jesuit education's path to the current U.S. Jesuit Institutions. Formal Jesuit education began when the Jesuits opened their first school in Messina, Sicily in 1548 (O'Malley, 1993). They established this school this to realize their founding mission; "to help souls" (O'Malley, 1993). Although not the original method of carrying out their mission, the Jesuits took to education quickly and by the time their founder, Ignatius of Loyola, died eight years later, they had already founded 35 schools (Currie, 2010). When the society was suppressed in 1773, Jesuit schools, universities, colleges, and seminaries numbered over 800, serving over 200,000 students globally (Codina, 2000).

After the suppression ended in the early 19th century, the Jesuits set about restoring schools (Currie, 2010). Amidst the suppression, John Carroll founded the Academy of Georgetown under the protection of Catherine the Great of Russia in 1789 (Codina, 2000). Over the subsequent 200 years, the Jesuits in the United States founded 27 additional universities in the United States. Where Georgetown was the first U.S. Jesuit institution of higher education, Wheeling Jesuit University was the final, founded in 1954. With institutions founded during three different centuries, 18 different states, and Washington, DC, of sizes ranging from less than 1,600 to almost 16,000, one might conclude that the differences among these institutions creates a lack of connection (AJCU, 2010, p. 15). Skeptics might even question whether this diverse collection of 28 U.S. institutions of higher education has actually taken this mission of their inspiring religious founder as their own mission. However, despite their differences, there is tremendous consistency in how they continue to define their mission and educational methodology (Currie,

2013). Looking to the stated missions of the institutions, their commitment to excellent liberal education, and to their specific educational practices, offers evidence that these institutions do indeed stand united in their commitment to the mission of the Society of Jesus despite numerous differences.

Identifying shared mission through mission statements. Institutional "mission statements transform long-term institutional goals into concrete action by explicitly defining purpose" (Ferrari & Velcoff, 2006, p. 115). Sandra Estanek, Michael James, and Daniel Norton have argued that, when systematically analyzed, mission statements of Catholic institutions of higher education can "speak for themselves so that the dominant values of Catholic higher education can be surfaced directly" (2013, p. 206). Reviewing the mission statements of the 28 member institutions of AJCU multiple times between 2009 and 2013, Charles Currie allowed the statements to speak for themselves (2010, 2013). He found that in 2013 these institutions utilized the following terms to describe themselves:

- Jesuit and Catholic (28 institutions or 100% of U.S. Jesuit institutions)
- Educating the Whole Person (25 or 89%)
- International or Global (23 or 82%)
- Service (23 or 82%)
- Fostering or Promoting Justice (22 or 79%)
- Academic Excellence (21 or 75%)
- Ethical or Moral Concern (21 or 75%)
- Leadership (18 or 64%)
- Liberal Arts (17 or 61%)
- Care for the Individual Person (16 or 57%)

Currie notes that, though these descriptors are not each unique among all U.S. Catholic institutions of higher education, the frequency with which U.S. Jesuit higher education institutions identify themselves using these terms is much higher than among all other U.S. Catholic higher education institutions. The common descriptors embedded in the mission statements of these institutions speaks to their continuing shared identity and mission. Founded by Jesuits to carry out the mission of the Society of Jesus, witnessing the shared modern expression of their university mission statements is powerful. This mission is common despite unique locations, varied student body demographics, and many other differences.

The shared inclusion of Jesuit and Catholic in all 28 of the U.S. Jesuit institutions strongly supports a shared history, tradition, and mission. What is not shared in these statements, however, is a direct claim to strengthen the faith of students. However, it is likely that either these institutions find that claiming an identity as Jesuit and Catholic affirms this commitment to strengthening faith or they believe that a direct statement of their faith formative goals may have the effect of excluding some individuals. This balance of actively claiming a goal of strengthening of individuals' faith and being inclusive of all is a point of potential tension in Jesuit higher education. This tension is reflected in the balance between undergraduate professional studies programs and traditional liberal arts program of studies (Killen, 2015), institutional finances and institutional identity (Association of Jesuit Colleges and Universities, 2012), and faculty hiring for mission and hiring for academic credentials (Pittau, 2000; Sullins, 2004). Each of these stresses challenges Jesuit institutions, and most have tried to strike a balance in each of these areas, offering the response of "both and" rather than "either or." In doing this, however, there is always a potential for not truly achieving either goal. Highlighting some of these stresses that challenge Jesuit institutions here is not meant to claim that a public and shared statement of the

goal of strengthening religious faith, among all Jesuit institutions, would address all of these challenges, but rather, to highlight the interrelated challenges that Jesuit institutions face and the compromises that are made to accommodate the varying tensions. In excluding language in their mission statements that explicitly calls out the institutional role of formators of faith, it is likely that institutional leaders believe that institutions' shared history and tradition and deep understanding of what it means to be Jesuit and Catholic is implied by stating Jesuit and Catholic in their mission statements. By virtue of these variables, they are claiming this role of formators and committing to strengthening religious faith (or increasing of religiosity) of their students. In the fourth part of the *Constitutions of the Society of Jesus*, Ignatius affirmed this goal of Jesuit education when discussing what should be taught in universities: "The end of the Society [of Jesus] and of its studies is to aid our fellow men to the knowledge and love of God and to the salvation of their souls" (1996, p. 180). In espousing a Jesuit and Catholic identity, institutions are inclusively stating a mission that seeks to increase the religiosity of those who attend.

A Jesuit Liberal Arts Identity

In their mission statements, all 28 U.S. Catholic Jesuit institutions commit to the Jesuit Catholic tradition while 61% commit to a liberal arts education. The unique history and foundation of Jesuit education likely accounts for the fact that not every Jesuit institution states liberal arts as a focus in their mission. It is likely that many do not feel it is necessary to state this, as Christian liberal education is a foundational piece of Jesuit education. Additionally, the inclusion of a strong academic core reflects a commitment to liberal arts education.

The Jesuit liberal arts tradition within higher education traces back to the *Ratio Studiorum,* which placed the liberal arts as the central focus. The *Ratio Studiorum* required excellent liberal education and spiritual formation in Jesuit education. The interconnection of liberal education and

spiritual formation is one that makes sense in the context of the Christian understanding of liberal education. The Jesuit understanding of liberal arts was built upon the framework of liberal education defined for Christians first by Saint Augustine of Hippo and then clarified by Saint Thomas Aquinas (Rose, 2015).

Grounded in Augustine's view of the potential for liberal education and combined with theological studies and an acceptance of God, to lead to faith, hope, and love, Aquinas concluded that though a liberal education contributes to the greatest cognitive capacity, it does not necessarily lead to the formation of Christian values as values formation requires reflection on context and habitual action (Rose, 2015). Ignatius and early Jesuits, developed the plan of studies to support cognitive formation and growth, while concurrently facilitating the development of a living and learning community that employed habitual communal learning and formative experiences of religious faith. Academically, early Jesuit education included the studies of literature and history. Though Aquinas did not believe literature or history were academic subjects, they were tools for reflection and the development of morals. The Jesuit plan of studies included these subjects and co-curricular and extra-curricular activities to support this formation of morals and values in students.

Evolving from Christian liberal education, early Jesuit education supported Jesuit higher education as it spread through Europe and then to the Americas (Leigh, 2016). As Jesuit liberal education spread, it continued to succeed because of its clear structure and the ability to root itself in the local context and evolve to meet the needs of that context (Leigh, 2016). This concurrent commitment to the Christian liberal tradition that is responsive to the social context is witnessed in the evolution of the core at each of the U.S. Jesuit institutions of higher education (Quigley, 2013).

In my own review of the 28 U.S. Jesuit institutions websites, I found that 25 explicitly state a liberal arts core curriculum, two, a humanistic core curriculum, and one no liberal core. I additionally found that all 28 institutions either maintain a liberal arts college or exclusively offer a liberal arts undergraduate education. Twenty-three of the U.S. Jesuit institutions also maintain membership in AAC&U, American Association of Colleges & Universities, the liberal arts association of U.S. higher education. This liberal arts identity continues to be a unifying feature of U.S. Jesuit higher education. David Quigley has both identified the commitment to a liberal arts tradition as central to Jesuit Catholic higher education and noted the importance, in the Jesuit tradition, for the liberal arts core to contribute to the "formation of a particular type of graduate" (2013, p. 8).

U.S. Jesuit institutions employ an educational model grounded in the Christian liberal arts tradition and includes co-curricular and extra-curricular opportunities for faith formation to enact the mission of strengthening students' religious faith. This model of education utilizes specific practices that are deemed to be high-impact. These common experiences provided in all 28 U.S. Jesuit institutions of higher education, include dialogue about faith as a component of academic courses, faith-based service immersion, offering the spiritual exercises of Saint Ignatius, faith-based retreats, spiritual direction, varying forms of the Examen of Conscience, and on-campus liturgical services. Additionally, 21 of the 28 institutions offer small group faith sharing, most commonly in the form of Christian Life Community, but not exclusively (Other institutions may offer this as well, but do not make note of it on their web sites.). These common co-curricular and extra-curricular experiences directly relate to these institutions' Jesuit identity. Given the prevalence of these practices at U.S. Jesuit institutions of higher education and their direct relationship to the uniquely Jesuit goals of these institutions, I selected these practices as the

Jesuit or Association of Jesuit College and Universities (AJCU) high impact practices. These high-impact practices also align with these institutions' liberal arts identity.

Other, non-Jesuit Catholic, U.S. liberal arts institutions implement similar practices and also believe that liberal arts education offers opportunities for students to develop strong cognitive skills and morals. Specifically, AAC&U makes the following statement on liberal education:

> A truly liberal education is one that prepares us to live responsible, productive, and creative lives in a dramatically changing world. It is an education that fosters a well-grounded intellectual resilience, a disposition toward lifelong learning, and an acceptance of responsibility for the ethical consequences of our ideas and actions. (Association of American Colleges & Universities, 1998, p. 1)

George Kuh and Robert Gonyea's (2006) perspective that reflection on individual religious beliefs is associated with a liberal education elaborates the strong interconnection of all of U.S. liberal higher education and the U.S. Jesuit institutions of higher education.

Challenges in this Purpose

The literature of Jesuit Catholic education is clear: the purpose of U.S. Jesuit Catholic higher education is to form people of faith. These 28 institutions share this common mission, history, identity as Christian liberal arts institutions; offer common Jesuit and liberal arts experiences; and sustain a core belief that strengthening religious faith is possible in the context of a specific higher education experience. These institutions also share a common challenge of assessing the accomplishment of their mission and the effects of this educational experience on their graduates. Efforts to research the effects of U.S. Jesuit institutions on faith development and engagement, however, have been limited.

Assessing Catholic Jesuit Higher Education

In response to *Ex Corde Ecclesiae*, much time and ink have been spent assessing whether or not a Catholic university has a truly Catholic identity. Significantly, most research conducted in Catholic higher education since *Ex Corde* has focused on the specific question of "How does one know if a college or university is Catholic?" Christopher Janosik (1999) and D. Paul Sullins (2004) offer strong examples of the form this research has taken.

Utilizing the research technique of thematic text analysis, Janosik reviewed the literature on U.S. Catholic higher education in order to develop a conceptual model for Catholic institutions to assess the essential Catholic identity questions of who institutions are and what they do (1999). Janosik's model, and the literature that he used in creating it, emphasize that assessing an institution of Catholic higher education involves checking for specific criteria that must be present in of a U.S. Catholic institution of higher education in order for it to be assessed as fully Catholic, and therefore successful.

Filling a gap in Janosik's model, Sullins (2004) offers research on the role of a critical mass of faculty in establishing and maintaining Catholic identity within Catholic higher education to the body of literature. His research employed factor analysis and structural equations to analyze a survey administered to 1,290 randomly selected faculty members at 100 American Catholic colleges and universities. His study looked specifically at the idea that a "critical mass" (50% or more) of devoted faculty members can promote or preserve Catholic identity. Sullins found that institutions having a critical mass of Catholic faculty experience four traits that are strong markers for Catholic identity: 1) preferential hiring of Catholics; 2) higher percentage of Catholic students; 3) greater faculty connection with Catholic identity; and 4) longer faculty tenure (Sullins, 2004). Sullins' work implies that a critical mass of Catholic faculty can serve as a variable to

to assess the level of success of a Catholic institution of higher education.

Both Janosik and Sullins, as well as others (Boylan, 2015; Collins, 2013; Gallin, 2000; Garrett, 2013; Heft, 2012; Killen, 2015; Peck & Stick, 2008; Whitney, S.J., 2005) identify concepts from *Ex Corde* as minimum standards or boxes checked, to determine the success of Catholic institutions of higher education. However, focusing and equating this "Catholic faculty" minimum standard with accomplishing institutional mission has limitations and does not focus on the impact these institutions are having on the post-college lives of alumni.

In addition to stating standards, *Ex Corde* also speaks to the necessity of Catholic higher education to be "offered in a faith-context that forms men and women capable of rational and critical judgment and conscious of the transcendent dignity of the human person" (Paul, II, 1990). In essence, Pope John Paul II called institutions to include formation in faith in their mission.

Melanie Morey and Jesuit John Piderit sought to assess both specific institutions and Catholic higher education as a whole based upon their Catholic identity (2006). Morey and Piderit's perspective on Catholic identity focuses on the impact that these institutions are having on students. Their research design included surveys and follow-up interviews with 124 senior administrators at 33 Catholic colleges and universities. Their findings demonstrated that administrators perceived a lack of impact on the faith formation of students. Morey and Piderit characterize this lack of impact on students as a significant crisis of institutional identity that needs to be addressed.

> The heart and soul of these institutions are transformational in nature, not just transactional. They are not just credit bearing [institutions], but life giving. These institutions teach people not only how to earn a living but how to live a life in a moral sense, an ethical sense, in a value sense. They give a moral compass that enables students

> to get through life's crisis situations. If you look at the mission of these institutions versus [a nonsectarian university] they are not the same (2006, p. 11).

Similar to Moorey and Piderit, Kirk Peck and Sheldon Stick (2008) endeavor to analyze Catholic identity and the formative power of that identity on the lives of students. Their research design was a single case study at one Jesuit Catholic institution that included survey and interviews of 15 faculty and one administrator (Peck & Stick, 2008). They found that Jesuit Catholic institutions are able to impact the faith formation of students and that relationships between administrators, faculty, and students are the key to fostering Jesuit Catholic identity within the academic environment of the university. They concluded that the Jesuit Catholic identity in an institution has the ability to form people of faith, but it needs supporters in order to begin those conversations.

Vincent Bolduc (2009) also studied the formative power of Catholic institutions of higher education. Bolduc utilized the survey responses from 925 Catholic student respondents at four New English Catholic institutions to analyze the relationship between religiosity and the practices of the students. He found that students with higher levels of religiosity engaged in service activities more frequently than others, were stronger advocates of liberal education, and were more supportive of their universities. Bolduc states that utilizing student surveys in studying Catholic higher education is just one method among many. However, he notes that this methodology has a basis of central importance to the Catholic Church based on Pope Benedict XVI's emphasis on the students and their experience of Catholic institutions in his 2008 statement at The Catholic University of America.

Michael Buckley (1998), Dean Brackely (2005), and Michael Garanzini (2007), all Jesuit priests and two university presidents, offer perspectives that support Jesuit Catholic higher

education being assessed by its ability to impact the faith formation of students. Buckley argues that Catholic higher education is expected to foster a "search for the whole truth about nature, man and God" (*Ex Corde,* p. 1). Echoing this call to be actively engaged in the faith-formation of students, Brackley presents a picture of a Jesuit university that is committed to faith formation and role models of this commitment to faith:

> When the university strives to understand reality, especially the great life-and-death issues, when it stands with the victims, when it struggles to overcome bias and to help students discover their vocation to love and service, when it embraces the Catholic tradition in dialogue with others, when it opens its doors to minorities and the poor, and when it takes public stands on vital issues, that community of learning is committing itself to that greater academic excellence which produces wisdom. (2005, p. 16)

Garanzini further asserts that Catholic higher education should focus on being formators of faith. In arguing that the Catholic identity of Jesuit Catholic higher education must be committed to the faith-formation of participants, he notes that with this commitment the community will come to engage more deeply in Jesuit Catholic identity in fresh and authentic ways (Garanzini, 2007). Echoing these fellow Jesuits, Charles Currie offers another strong perspective on the mission of Jesuit Catholic institution—that is to form individuals of faith (Currie, 2013). Currie believes that in forming people of faith these institutions can improve the entire world.

Reviewing the statements of Buckley, Brackley, Garanzini, and Currie in collaboration with Jesuit history and Ignatian Spirituality, it can be argued that Janosik, Sullins, and others' similar efforts to assess Catholic institutions by their meeting of certain minimum standards of being Catholic, are not the most effective ways to assess U.S. Jesuit Catholic higher education.

Speaking on U.S. Jesuit higher education in 2000, Kolvenbach significantly refocused the important questions for the U.S. Jesuit institutions: "Who are our graduates becoming?" and "What impact are they having in the world?" (Kolvenbach, 2000; Nicolas, 2010). With this reframing has come clarification from U.S. Jesuit higher education on exactly what Kolvenbach's call means and how this call is, can, or should be manifested on these 28 campuses (Much of this clarification is noted in prior sections.). At the same time, little research has attempted to answer Kolvenbach's question "Who do graduates of U.S. Jesuit higher education become?" or more specifically, "Are adult alumni of U.S. Jesuit higher education people of faith?" Assessment of U.S. Jesuit institutions may benefit from a focus on the formation of individuals as people actively engaged in their faith into adulthood. However, despite this potential benefit of assessing U.S. Jesuit institutions based upon the faith of their alumni, these institutions have yet to examine the levels of religious faith and engagement of their middle adult alumni, whether these alumni believe that their experience in Jesuit higher education impacted their faith after college, or what institutional experiences might relate to increased strength of religious faith of these alumni. The lack of research on these specific questions is possibly due to the logistical challenges of gathering data from individuals not currently in college and to challenges that instruments adequately reflect a construct of faith that is relevant to Jesuit Catholic higher education.

Religiosity

If a central focus of U.S. Jesuit higher education is the strengthening of religious faith, then it is important to have a systematic manner in which to explore individual faith lives in adulthood and to analyze the potential effects the unique practices of U.S. Jesuit higher education have on individuals' religious faith and engagement. Unfortunately, U.S. Jesuit higher education has not agreed on a system for gathering data or a tool for gathering data on this group of alumni.

Fortunately, potential guidance in this effort exists as individuals' faith lives have garnered the interest of many researchers in the U.S. for over a century.

Analysis of faith as an important component of individuals' lives has occurred in the United States with intentional effort since at least the early 1900s when William James differentiated between experienced religion and inherited religion (James, 1917). The study of faith has only heightened as evidence has mounted supporting theories that individual faith beliefs, practices, and knowledge positively correlate with mental health, life satisfaction, personal happiness, and hope (Idler et al., 2003; Jensen, Jensen, & Wiederhold, 1993; Johnson & Mullins, 1990; Larson et al., 1992; Plante & Boccaccini, 1997a). By 2001, over 1,200 studies had gathered data on the relationship between faith, religion, spirituality, and health (Ellison & Fan, 2008). These studies are in addition to research conducted in the area of higher education (discussed below). Despite this extensive research, challenges surrounding the definition of faith, and clear, agreed upon, and mutually understood definitions of religion and spirituality among either researchers or those being researched remain (Overstreet, 2010).

In her research on religion and spiritualty among Catholic college students, Dawn Overstreet highlights the variety of definitions of spirituality and religion utilized by researchers of the topic (2010), despite the fact that the terms have been used extensively within Catholic history and tradition (Cunningham, 2002; Overstreet, 2010; Schneiders, 1989). Overstreet then goes on to recommend the more inclusive definition of spirituality as "the experience of consciously striving to integrate one's life in terms …of self-transcendence toward the ultimate value one perceives" (Schneiders, 1989, p. 684) and the definition of religion as "a shared system of beliefs, principles or doctrines related to a belief in and worship of a supernatural power or powers regarded as creator(s) and governor(s) of the universe" (Love, 2001, p. 8). She makes note

that the Catechism of the Catholic Church (1994) states that religion includes individual expression of faith and spirituality. Seeking to clear these murky waters and clearly unite faith and spirituality some researchers have conceptualized faith, spirituality, beliefs, practices and levels of commitment to faith as parts of the larger construct of religiosity (Wink & Dillon, 2002).

Construct of Religiosity

The construct of religiosity has been defined conceptually as the importance or centrality of religion, including faith and spirituality, in the lives of individuals (Wink & Dillon, 2002). Yet, despite this clear conceptualization of religiosity, operationalization of the construct offers challenge (Holdcroft, 2006). This challenge may be due to the diversity of fields of study which have utilized this concept (Holdcroft, 2006) due to a more recent focus by some to divide and create separate religious and spiritual constructs (Hill & Pargament, 2003), or due to a failure of agreement on what factors should make up a construct of religiosity (Hill & Hood, 1999).

Peter Hill and Ralph Hood (1999) have provided some guidance on the operationalization of this construct for multiple disciplines, ranging from psychology and sociology (Cruise, Lewis, & Lattimer, 2007; Cutting & Walsh, 2008; Hall, Edwards, & Wang, 2016; Kimball, Boyatzis, Cook, College, & Leonard, 2016; Miller, Shepperd, & McCullough, 2013; Plante & Boccaccini, 1997a; Worthington, Everett et al., 2003) to marketing and higher education (Astin et al., 2011; Bolduc, 2009; Khraim, 2010; Mathur, 2012). Hill and Hood draw together a large number of instruments for measuring religiosity in individuals with the goal of advancing the measurement of religiosity in research in a more coherent manner (Hill & Hood, 1999). This effort compiled previous research on religiosity and provided salience around the idea that the study level of religiosity has been built on a three-facet construct. This three-part construct includes: intrinsic faith, extrinsic faith, and quest (or engagement in a search for larger truths).

Gordon Allport's work (1966b) identified and measured two contrasting forms of religious commitment (1966b): intrinsic faith and extrinsic faith. He conceptualized intrinsic and extrinsic faith as two poles of religiosity. Intrinsic faith is an individual's personal commitment to faith as an end in itself. Extrinsic faith is an individual's personal commitment that serves to reach other self-focused ends (Allport & Ross, 1967; Allport, 1966a, 1966b; Batson & Schoenrade, 1991; Cohen et al., 2005; Hill & Hood, 1999). Allport places these concepts at two ends of a continuum: "the extrinsically motivated person uses his religion whereas the intrinsically motivated lives his religion" (Allport & Ross, 1967, pg. 434). Stated differently, an individual who uses their practice of religion to advance himself socially or professionally would be expected to have a high level of extrinsic faith. An individual who finds personal fulfillment independent of any positive or negative social status benefit or loss through their faith practice would be expected to have a high level of intrinsic faith. Building upon the work of Allport, C. Daniel Batson (1991) added a third dimension to the construct of religiosity, quest, which considers the level at which individuals engage in asking and considering questions of life, death, meaning, purpose, and connection with others (Bailey et al., 2016; Batson & Schoenrade, 1991; Holdcroft, 2006). Utilized together, these components create a construct of religiosity that is operationalized for potential measurement.

Though revisions, refinements, and additions have been made to Allport's and Batson's operational constructs of religiosity and accompanying items and scales, much of the current operationalization of religiosity within the academic fields of psychology and sociology is built upon their work (Hall, Tisdale, & Brokaw, 1994; Plante & Boccaccini, 1997b). However, despite the expansive work that has been done on operationalizing religiosity in these academic fields, the study and operationalization of religiosity within the study of higher education has been more limited.

Higher Education, Faith, Spirituality, Religion, and Religiosity

Research on the relationship between college participation and levels of religiosity among graduates in the U.S. by the early 1980s had reached the generally accepted conclusion that college graduates were less religious than non-graduates (Albrecht & Heaton, 1984; Beckwith, 1985; Caplovitz & Sherrow, 1977; Funk & Willits, 1987; Johnson, 1997). Many researchers believed David Caplovitz and Freed Sherrow's (1977) conclusion that based on the linear relationship between education and apostasy found in the data from the General Social Survey, increased levels of education correlated with decreased levels of religiosity. Initially posited by Peter Berger (1967), this conclusion was grounded in the theory that students' encounter with pluralism in their college years erodes their religiosity. Yet, in the last 15 years new data and differing forms of analysis have challenged this conclusion (Astin et al., 2011; Hill, 2009, 2011; McFarland, Wright, & Weakliem, 2011; Mooney, 2010; Schwadel, 2011, 2016; Uecker, Regnerus, & Vaaler, 2007).

Although current researchers have reached varying conclusions, all seem to concur that the connection between education and religiosity has yet to be definitively ascertained and that a correlation between increased education and increased levels of renunciation of religious faith, or apostasy cannot be presumed. However, this research has focused predominately upon religiosity of individuals during their time in college, rather than attempting to study any potential long-term effects of college on later life's levels of spirituality, faith or religion.

Alexander and Helen Astin's series of dialogues at the Fetzer Institute, in 1998, serve as a watershed moment in the study of the spiritual development of college students (2010). This gathering of scholars reignited interest in the inner lives of college students. As the Astins (2010) and Jonathan Hill (2009) have separately noted, prior to the turn of the millennium there was a

lack of current research on the relationship between college and individual spiritual lives. This scarcity of research is clearly represented in Ernest Pascarella and Patrick Terenzini's *How College Affects Students: A Third Decade of Research* (2005), which reviewed 2,500 research studies on college students and found "spirituality" not referenced at all and "religion" referenced only twice. In the subsequent years, college students' faith lives and the correlation between college attendance and engagement in faith and spirituality has received increased attention (Hill, 2009, 2011; Lee, 2002; McFarland et al., 2011; Mooney, 2010; Schwadel, 2011, 2016; Uecker et al., 2007). Significantly, the Astins and the Higher Education Research Institute (HERI) have dedicated a good deal of time researching student spirituality and identifying high levels of interest in spirituality among college students (Astin & Astin, 2010; Astin et al., 2011; Astin, 2004; J. P. Hill, 2009).

In their work, Helen and Alexander Astin draw a clear differentiation between religiousness (or religiosity) and spirituality. Defining spirituality as having "to do with our interior, subjective life. It has to do with the values that we hold most dear, our sense of who we are and where we come from, our beliefs about why we are here—the meaning and purpose that we see in our work and our life—and our sense of connectedness to each other and to the world around us" (Astin & Astin, 2010, p. 2). Though spirituality is an important construct for examination, it is not as important to Jesuit higher education as the larger, potentially more encompassing, construct of religiosity.

Religiosity in Higher Education

Jonathan Hill (2009) and Jenny Lee (2002) have noted a specific lack of research on religiosity within the study of higher education. Utilizing a sample of 4,000 students at 76, four-year institutions of higher education they surveyed as freshmen in 1994 and then again in 1998,

Lee found (while working with HERI), contrary to previous research, that religious beliefs of students tend to change during college, but fewer experience a lessening of faith than a growth of faith (Lee, 2002). Utilizing a longitudinal sample of 8,623 young people, available through the National Longitudinal Survey of Youth 1997 (NLSY1997), a nationally representative panel survey data set, Hill concluded that "respondents in college and respondents with an associate's degree attend religious services less frequently than individuals who never attended college, and those with a bachelor's degree" (2009, pp. 522-3). Though he notes that this conclusion may not offer the complete picture of the data. Hill theorizes that there is a possibility that the overall decrease in religious service attendance by all late adolescents and young adults and may be confounding age with educational attainment. He also considers an additional possibility that the results are being impacted by selection effects, most significantly that individuals that have higher rates of religious service attendance have higher levels of academic achievement, though his analysis concludes that this selection effect does not account for all of the correlation.

Hill's utilization of the NLSY1997 data set to examine the relationship between college attendance and religiosity of individuals comparatively by years of education (including those with no college) offers benefits and challenges. The benefits of utilizing this data set include the statistically representative sample and the inclusion of both college attenders and non-attenders, which can be utilized for comparative purposes. However, the sole survey question connected to religiosity is on frequency of church attendance, which has been found to be a fairly limited indicator of religiosity.

Philip Schwadel (2016) used another large statistically representative data set to analyze the relationship between higher education and religiosity. His analysis of higher education as a cause for religious decline utilizes the National Study of Youth and Religion (NSYR). The NSYR

is a four-wave survey that collected data at intervals between 2002 and 2012 from a random sample of 3,290 (with 2,071 participating in all four waves). In wave 1, participants were between 13 and 17 years of age. Schwadel states that his analysis concluded that those who attend college attend religious services less frequently than those who do not, though more frequent religious service attenders go to college at higher rates. Additionally, those who attend college do experience a within-person decrease in frequency of prayer and overall religiosity. However, those who go to college are more religious prior to college than those who do not, so they do not have a lower frequency of prayer or lower overall religiosity than those who do not attend college. Overall, Schwadel's analysis strengthens the argument that selection effect may explain more about the relationship between college and religiosity than previously understood. Though the NSYR utilizes variables related to religiosity beyond religious service attendance, the data set does have limitations. Most specifically, responses from subjects do not extend beyond age 30, meaning that the data are limited to emerging adults, and the instrument asks respondents to answer over 200 questions. Additionally, the measures of religiosity make the assumption of a Judeo-Christian belief system of respondents.

Hill, Lee, and Schwadel offer much on the state of research on religiosity and higher education (Hill, 2009, 2011; McFarland et al., 2011; Mooney, 2010; Reimer, 2010; Schwadel, 2011; Uecker et al., 2007). Specifically, they highlight that it cannot be concluded that higher education has a negative effect on level of religiosity and that the construct of religiosity needs to be further refined in this area of study.

Plante and Boccaccini's Santa Clara Strength of Religious Faith Questionnaire

Despite the potential challenges in the study of religiosity in higher education, some progress has occurred. Thomas Plante and Marcus Boccaccini (1997a, 1997b) developed and

tested a valid, reliable, and easy-to-use tool for researchers to utilize in the study of religiosity. Though not developed solely for the study of religiosity in higher education, much of their research has been conducted among college students. Plante and Boccaccini's operationalization of religiosity and their development of the Santa Clara Strength of Religious Faith Questionnaire (SCSORFQ) is built upon the work of Allport and Ross (1967) and Batson and Schoenrade (1991).

Building on the aforementioned conceptual understanding of religiosity, Allport and Ross developed the Religious Orientation Survey (ROS) to gather data on individual's levels of intrinsic and extrinsic religiosity (Allport & Ross, 1967; Hall et al., 1994; Plante & Boccaccini, 1997b), which has been revised and adapted by other researchers. Batson and Schoenrade (1991) added to and adapted the ROS to also include items related to Batson's quest dimension of religiosity. His subsequent Religious Life Inventory (RLI) gathers data on extrinsic and intrinsic religiosity, as well as level of engagement in more existential and other larger life questioning (Batson & Schoenrade, 1991; Hall et al., 1994; Plante & Boccaccini, 1997b). Though both the ROS and RLI continue to be utilized, revised, and tested, they are still limited in their usefulness for studying religiosity, as their focus is not on identifying individual's strength of religious faith. Additionally, both the ROS and RLI instruments assume that respondents are religious and require a large investment of time by respondents (Plante & Boccaccini, 1997b).

Plante and Boccaccini (1997b) recognized the challenges of previous religiosity measures and the need for a tool specifically designed to assess strength of religiosity among religious and non-religious individuals in a brief and easy-to-use format. These needs led to their creation of the Santa Clara Strength of Religious Faith Questionnaire (SCSORFQ), which has been thoroughly psychometrically tested (Plante, 2010; Plante & Boccaccini, 1997a, 1997b; Plante, Vallaeys,

Sherman, & Wallston, 2002). Plante and Boccaccini intentionally designed the easy-to-use instrument to meet the specific challenges of accessing religiosity among religious and non-religious. This instrument has been used in multiple studies at a diverse selection of universities. Furthermore the SCSORFQ was developed and has been used in multiple studies on religiosity conducted at Santa Clara University, a Jesuit institution of higher education (Plante, 2010; Plante & Boccaccini, 1997a, 1997b; Plante et al., 2002).

Based on the strong conceptual foundation, design, psychometric testing, and previous utilization in a Jesuit higher education setting, the SCSORFQ is an appropriate instrument to utilize in survey research focusing on religiosity of alumni of Jesuit higher education.

Conclusion

Jesuit higher education, as both Jesuit and Catholic, is called to intentionally offer a different education then secular public or private education. Modern Jesuit Catholic universities, as other institutions of higher education, are called to "peer reviewed research, research-grounded teaching and teaching as mentoring, and service, all within a climate of academic freedom" (AJCU, 2012). However, being Jesuit Catholic liberal arts institutions, the mission of these institutions also includes "the education and formation of students in such a way and in order that they may become men and women of faith and of service to their communities" (AJCU, 2012). Within Jesuit institutions of higher education "students are engaged in a process of exploring the distinctive and constructive ways in which their knowledge and talents will best serve society" (AJCU 2016). These institutions are called by historical legacy of their founder, their mission, and Christian liberal identity to hold themselves to a standard that is uniquely and intentionally different from numerous other institutions of American higher education.

Identifying how an American institution of higher education that educates and forms

students committed to faith impacts the lives of students in a manner that is significant, realizes the legacy of their founder and supports the future of Jesuit higher education. The importance of understanding the potential effects of Jesuit higher education on their graduates' faith lives goes to the very heart of these universities' mission. A greater understanding of the effects of the specific Jesuit liberal arts experiences on the strength of religious faith and engagement in that faith allows a potential to better understand how to focus efforts to best continue to achieve the mission of Jesuit higher education.

CHAPTER 3

This dissertation advances understanding of the strength of religious faith and faith engagement (religiosity) of U.S. Jesuit college and university adult alumni. It also examines the relationships between specific, high-impact college practices and levels of religiosity among these alumni. The research accomplishes this through a relational design utilizing cross-sectional survey methodology. The purpose of the design allows for both descriptive analysis of levels of religiosity of adult alumni of Jesuit higher education and relates U.S. Jesuit college and university alumni participation in specific college experiences with their strength of religious faith through a multiple linear regression analysis.

Adult strength of religious faith and engagement relates directly to the purpose of Jesuit higher education which is to graduate students who are committed to an active faith. To date, research on the strength of religious faith and faith engagement of alumni of Jesuit higher education has not extended meaningfully beyond the analysis of specific cases of notable alumni of these institutions (AJCU, 2017b). This dissertation addresses this gap in research. The cross-sectional, self-administered survey design utilized in this research serves as a foundation for needed future research in this area.

Research Questions

1) What is the level of religiosity among alumni of U.S. Jesuit higher education in middle adulthood in comparison to their pre-college level of religiosity?
2) Is there a relationship between U.S. Jesuit higher education middle adult alumni levels of religiosity and past participation in “high-impact” undergraduate educational experiences?

Method

Given these specific research questions, the research population, and available resources for this research, a self-administered online survey was the most appropriate research design (Vogt, Gardner, & Haeffele, 2017). Data on specific thoughts, feelings, and practices related to the religiosity of this population are not readily accessible from sources other than the members of the defined population, which I gathered through a survey. Data were collected through a structured multiple-choice format that produced responses that are appropriate for both descriptive statistics and multivariable regression analysis. An online self-administered survey also offered the additional benefit of low cost and relatively quick distribution.

This study utilized a cross-sectional design with some retrospective questioning. The retrospective questioning allowed for statistical controls for individuals' pre-college religiosity and demographic characteristics. It should be noted that retrospective questions introduce the possibility of respondents unintentionally responding incorrectly to questions. The challenges around retrospective questions for respondents include: a) the need for individuals to remember previous events, details, or beliefs that they have held with great enough accuracy that they are able to respond to specific questions; b) the potential for misunderstanding or misremembering the time in question, which occurs when a question asks about a timeframe that could be interpreted broadly or as a result of temporal self-appraisal theory. Temporal self-appraisal theory states that individuals will unintentionally alter their past experiences or beliefs in order to avoid cognitive dissonance that could result from a past image of self not aligning with present self-image (Wilson & Ross, 2001, 2003). Study of self-appraisal theory in relationship to religious faith is currently inconclusive, however (Hayward, Maselko, & Meador, 2011). In the absence of

an ability to conduct a longitudinal study with a simple random sample and a control group, retrospective questioning is an acceptable alternative.

Sample

The population on which this research focused are graduates of the 28 American Jesuit colleges and universities who received degrees between 2000 and 2010. Participants were targeted using a census approach supported by the Association of Jesuit Colleges and Universities and the alumni offices of the 28 Jesuit colleges and universities. Alumni who graduated between 2000 and 2010 were selected as the target population for this specific research because they represent a group that, at the point of data collection in 2019, had completed emerging adulthood, which is characterized by significant identity exploration (Arnett, 2000, 2002, 2012; Cote, 2006; Konstam, 2015). Such graduates are now in the period defined as middle-adulthood, which occurs at whatever age individuals accept responsibility for themselves, make independent decisions, become financially independent, finish education, settle into a career, marry, or enter into parenthood (Arnett, 2000). The majority of these 2000 to 2010 graduates, now aged between 29 and 41, have likely reached these milestones. Furthermore, in the area of religiosity, strength of faith and engagement in faith-based practices dip markedly during the emerging adult period and tend to stabilize during the middle adult period (Bengtson, Silverstein, Putney, & Harris, 2015; Levin & Taylor, 1997; Uecker et al., 2007). Although there are only 27 colleges currently considered American Jesuit colleges or universities, alumni of 28 institutions were included because they enrolled the targeted, pre-college population.

The total population from which this sample was drawn included approximately 385,000 alumni from the 28 U.S. Jesuit colleges and universities who graduated between 2000 and 2010, as reported by institutions to the AJCU for their *Fact File* report (2014). Based on this report, this

group is approximately 60% Catholic, 77% white, and 57% female; however, this report and its data have limitations: a) not all universities reported their data every year; and b) the alumni data are calculated from student data as alumni data are not included in the report.

Instrumentation

In order to answer research question 1, descriptive analysis was completed on survey responses. Levels of strength of religious faith and faith engagement were calculated using questions from Plante and Boccaccini's Santa Clara Strength of Religious Faith Questionnaire (SCSORFQ). This instrument was used because of its strong conceptual foundation, easy-to-use design, intense psychometric testing, and previous utilization in the Jesuit higher education setting. Mean comparisons were used to evaluate changes in strength of religious faith and faith engagement between emerging adult and middle-adult periods.

To respond to research question 2, multivariable regression was utilized in order to analyze the relationship between each of the defined, widely used, AAC&U "high-impact" undergraduate experiences and the previously defined Jesuit, or AJCU, higher education experiences and levels of religiosity.

Survey Instrument

The survey instrument developed for this study consisted of 60 questions and was designed to be distributed electronically and self-administered. The instrument includes questions regarding pre-college experience and demographics, questions on current demographics, questions regarding engagement with the Association of American College and Universities (AAC&U) high-impact educational practices (King, Brown, Lindsay, & VanHecke, 2007) and high-impact Jesuit educational practices and current religiosity (The complete survey appears in Appendix A.). Development of this specific instrument included multiple revisions that were

made based on expert instrument review and pilot testing. Instrument review was conducted by the President of the Association of Jesuit Colleges and Universities, Rev. Michael Sheeran, S.J., Ph.D., and included two follow-up conversations. Additional instrument review was conducted by Karen Arnold, Ph.D., Sara Moorman, Ph.D., and Rev. Casey Beaumier, S.J., Ph.D. Pilot testing was conducted with 18 individuals in the target population and was followed up with individual conversations with four of the pilot group members (C. Cownie, personal communications, August 3-15, 2019).

The survey instrument was distributed to alumni through college and university alumni office email or social media, Association of Jesuit College and University social media (FaceBook and Twitter specifically), and targeted advertisements on social media. Although sampling had the potential to include the entire target population, university alumni offices created the protocol for distributing the survey and chose not to inform me of the specific protocol. Only three universities provided notification of how the survey was distributed or participated in follow-up phone calls: Loyola New Orleans distributed the survey only to alumni board members only; Regis put it on social media as their email system had been compromised; and Le Moyne College distributed it through their alumni e-newsletter. Overall, 483 completed the survey, with an unknown response rate as described below.

Response Rate Challenges

Prior to collecting data, I knew that there was potential for coverage errors due to dependence on institutional cooperation, institutional emailing lists, and the web-based platform. Although Santa Clara University staff had stated that they had valid email addresses for approximately 96% of their 2015 graduates six months after graduation, the survey response rate among these individuals at six months after graduation was 42%. Upon inquiry, the university

noted that their percentage of valid email addresses tends to decrease further out from individuals' dates of graduation. Additional concerns regarding potential response rate also existed prior to launching the survey.

As highlighted by PEW Research Center in their 2015 study "Coverage Error in Internet Surveys," approximately 20% of adults nationally will not respond to web-based surveys due to not being internet users or refusal to respond to Internet surveys. With responders who provided email addresses to their alma maters, lack of internet usage was not of significant concern to me.

Arlene Fink (2017) identifies four potentials for coverage error in Internet, or web-based, surveys. These include individuals utilizing multiple email addresses, privacy and confidentiality concerns, identity of respondents, and technology differences. With multiple email addresses that individuals currently use, it is a challenge to know which accounts respondents regularly check. Many individuals are also concerned about potential privacy or confidentiality issues of online surveys due to data maintenance and poor security of personal devices. Additionally, once the online self-administered survey is sent to an individual email, it is impossible to know who is actually completing the survey. Technology differences are a continuing concern as each respondent will have a unique preference for Internet connection, browser, and viewer settings. I attempted to mitigate these concerns through repeated testing of the survey; however, it was a challenge to foresee all potential coverage error possibilities related to using a web-based, self-administered survey.

Despite these potential challenges, web-based surveying was still the preferred method in this study as it allowed for affordable, broad survey distribution across 28 institutions. Additionally, I utilized multiple strategies to attempt to increase response rates. These strategies

included careful attention to survey invitation, intentional professional survey design and layout, and a limited number of prizes awarded by random selection.

After administering the survey, I found that my concerns about the university alumni office teams' ability to cooperate in this research and their alumni email systems were well-founded. Institutions' alumni office staffs afforded limited collaboration and were unclear about the percentage of alumni for whom they had actual working emails or email accounts on record that were checked regularly. I also found that social media offers great potential for web-based self-administered survey research, but utilizing it effectively in this capacity needs additional research. While targeted social media advertising allowed for selection of target audiences by age and college affiliation it is limited by information users provide to the social media and the authenticity/truthfulness of that information.

Thus, these factors prevented calculating an accurate response rate or confidently generalizing results to the population of interest. Despite this challenge, this research does offer meaningful data and can support argument for additional studies in an area where research is limited. Such research should include a larger sample, a more definitive picture of the sampling frame, and a high response rate. Nevertheless, none of the challenges definitively indicates a significant nonresponse bias which a larger more important issue of concern in survey research (Groves, 2006; Groves & Peytcheva, 2008; Peytchev, 2013; Phillips, Reddy, & Durning, 2016; Stedman, Connelly, Heberlein, Decker, & Allred, 2019). As Frauke Kreuter (2013) has argued, though a low response rate indicates potential for nonresponse bias, it does not assure it. Rather, nonresponse bias only exists if individuals elect not to respond to a survey because of questions asked within the survey as the "the relationship between response propensity and the variable of interest…determines the extent of the bias" (Wright, 2015, p. 305). The diversity of responses to

questions regarding the variables of interest offers the possibility that survey respondents are representative of the population. In any case, this research has great potential for Jesuit higher education to develop a greater understanding of adult AJCU alumni religiosity and its relationship to high impact practices. Despite limitations, the sample is at least potentially representative, provides an initial view of alumni religiosity, and points to directions for additional, more expansive, research in this area.

Variables

Control variables. Alexander Astin (1993), Ernest Pascarella (1985), and Ernest Pascarella and Patrick Terenzini (2005) have offered conceptual guidance to researchers regarding control variables when studying the potential impact of experiences in higher education on students. Their conceptual models argue that in order to accurately estimate the potential effect of any one or group of college experiences three other groups of potential factors must also be considered. Factors that can influence the variable or variables of interest include: individual abilities and traits; previous experiences; and other university experiences (Kilgo, Sheets, & Pascarella, 2015). Research on religiosity (Cornwall, 1989; Montoro, 1983; Wink & Dillon, 2002; Wink, Ciciolla, Dillon, & Tracy, 2007) also informed the control variables for this research.

The control variables for this research are divided into demographics, pre-college experiences, in-college experiences, and current experiences. Demographics variables include sex, race, and birth year. Pre-college experience variables include financial status, parent or guardian average education level, type of high school attended, parental support of faith life, and pre-college religiosity. Financial status and parent education serve as proxies for child SES (cSES). Their inclusion is based on the work of Doris Entwisle and Nan Marie Astone (1994) and Oakes and Rossi (2003) and informed by AnushaVable, PaolaGilsanz, Thu Nguyen, Ichiro

Kawachi, and Maria Glymour's (2017) work on retrospective cSES. Creating composite variable for SES was not attempted because of the challenge to define all aspects of SES clearly and because separate variables better support the multivariable regression analysis in this study, as greater variance is accounted for by component measure (Oakes, 2018). The in-college experience variables referred to major and hours of work for pay and are based on Kilgo, Sheets, and Pascarella (2015) high-impact educational practices research. Current experiences included financial status, relational status, number of children, and current faith or religious group membership as all have been found in research to have a potential effect on religiosity (Cornwall, 1989; Montoro, 1983; Wink & Dillon, 2002; Wink et al., 2007).

Independent measures. The AAC&U and Jesuit high-impact practices are utilized in this survey instrument as independent variables. Nine of the 10 high-impact practices are included in this research. The 10th practice, e-portfolios, is not included as it was only added in recent years and was uncommon in Jesuit universities between 2000 and 2010. The order of high-impact practice variables was randomized in order to account for any potential survey fatigue or later question click-through as the section includes 16 dichotomous questions consecutively.

The AAC&U practices included as variables in this study are noted below with their variable names in brackets.

The AAC&U high-impact educational practices include [Variable name]:

1. Internship, co-op, field experience, student teaching, or clinical assignment [Internship].
2. Undergraduate research supervised or supported by a faculty member [Research].

3. Diversity or global learning (Ex. courses or programs that encouraged your exploration of cultures, life-experiences, or worldviews different than your own; these may have included study abroad or other immersive experiences) [Global].
4. Community-based project or service learning as part of an academic course [Service Learning].
5. Culminating experience, (Ex. a "senior capstone" course, senior project or thesis, or comprehensive exam) [Capstone].
6. Common intellectual experiences (Ex. common core set of courses) [Common].
7. First-year seminar and/or first-year experiences that intentionally placed you in a small group of peers for inquiry, writing, or collaborative learning [First-year Exp].
8. Learning Community (Ex. two or more linked courses that examine questions that have an impact beyond the classroom) [Learning Community].
9. Writing-intensive courses (Kilgo et al., 2015; Seifert, Gillig, Hanson, Pascarella, & Blaich, 2014) [Writing].

The seven selected high-impact Jesuit educational practices included in the survey instrument are noted below along with their variable names in brackets.

1. Faith sharing group (Ex. Christian Life Community) [CLC].
2. On campus liturgical services (Ex. Prayer services, Masses, worship services, etc.) [Liturgy].
3. Spiritual Direction (facilitated by a priest, nun, or lay person) [Spiritual Direction].
4. A faith-based retreat of any kind [Retreat].
5. The Spiritual Exercises (Either in annotated, abbreviated, retreat, or busy person's format) [Spiritual Exercises].

6. Daily Examen (I.e. Ignatian Examen, Examen of Conscience) [Examen].
7. Dialogue regarding faith and justice in academic courses [Faith/Justice]

Dependent measure. The Santa Clara Strength of Religious Faith Questionnaire was included in the survey instrument as the dependent variable (religiosity) and as an independent variable (Retrospective report of pre-college religiosity). Unlike many other instruments currently utilized for gathering data on religiosity, the SCSORFQ neither assumes that a respondent is religious nor of a specific denomination (Plante et al., 2002). An additional benefit of this specific measure of religiosity is that the instrument has been thoroughly psychometrically tested. The original 10 item SCSORFQ has been utilized in many research studies with results published in multiple peer-reviewed journals (Plante, 2010). The 10 items of the SCSOFRQ are structured as uni-dimensional and completed on a single 4-point, Likert scale from "Strongly Agree" to "Strongly Disagree." The total score range of the summed responses of the items on the instrument ranges from 10 to 40 with 10 representing low strength of faith and 40 representing strong strength of faith. The questions included in the variable are:

1. My religious faith is extremely important to me.
2. I pray daily.
3. I look to my faith as a source of inspiration.
4. I look to my faith as providing meaning and purpose in my life.
5. I consider myself active in my faith or church.
6. My faith is an important part of who I am as a person.
7. My relationship with God is extremely important to me.
8. I enjoy being around others who share my faith.
9. I look to my faith as a source of comfort.

10. My faith impacts many of my decisions.

Since the development of the instrument, in 1997, it has been used in numerous studies in the United States and Europe (Plante, 2010). The majority of these studies have sampled college students and medical populations due to accessibility to researchers of these populations and the rising interest in correlations between religiosity and physical and emotional health (Freiheit, Sonstegard, Schmitt, & Vye, 2006; Pakpour, Plante, Saffari, & Fridlund, 2014; Plante, 2010; Storch, Roberti, Bravata, & Storch, 2004). Researchers have found the instrument to be highly reliable as it is internally consistent, with a Cronbach's Alpha range of 0.94-0.97 and a range of split-half reliability scores of 0.90-0.96. The SCSORFQ has additionally been demonstrated to be a valid instrument. The instrument correlates with measures assessing internal religiosity (*r* range of 0.76-0.90) and external religiosity (*r* range of 0.64-0.73). Multiple factor analyses confirm a single factor, Religiosity (Plante, 2010).

Review of Data

Review of the data collected through the online survey began with inspection and cleaning of the data variable by variable. In reviewing and cleaning the data I looked for any patterns in missing data or unexpected answers, which might indicate that respondents experienced problems with the survey, or demonstrated unexpected response patterns, such as a large percentage of respondents skipping specific questions or group of questions. A small number of respondents (out of 483) missed answering a question or two. The questions left unanswered were not in the variables of interest, however, and lacked any apparent pattern. The question skipped by the most individuals, where an answer was expected, was graduation year (skipped by 22 respondents, who noted they graduated, but failed to list the year).

Variable of Interest

I also checked the range, minimum, maximum, mean, and standard deviation for the variables. Only those descriptive statistics related to present levels of religiosity are relevant to the first research question; however, the descriptive statistics for the remaining variables provided additional context for the sampled group. Descriptive statistics for the independent variables of interest were also analyzed and reported. Additionally, I checked internal consistency for current religiosity (ReligCurrent) and pre-college religiosity (ReligPreCol) by calculating Cronbach Alpha's and split-half reliability scores (Table 3.1 below). Plante (2010) notes that multiple studies utilizing the SCSORFQ have found Cronbach Alpha's ranging from 0.94 to 0.97 and split-half reliability scores ranging from 0.90 to 0.96. This research has similarly established strong internal reliability of the SCSORFQ among this sample (0.973 – current religiosity; 0.967 pre-college religiosity).

Table 3.1
Psychometric Properties of Religiosity and Pre-College Religiosity Normality

				Internal Reliability		Range		Normality	
Variable	*n*	*M*	*SD*	α	*Split-half*	Potential	Actual	Skew	Kurtosis
Current Religiosity	483	29.482	8.711	0.973	0.965	10-40	10-40	-0.717	-0.335
Pre-college Religiosity	479	28.350	7.692	0.967	0.958	10-40	10-40	-0.510	-0.051

I reviewed the normality of the composite religiosity variables. Table 3.1 displays the psychometric properties of the current religiosity and pre-college religiosity composite variables. These composite variables were calculated by summing the values of each of the 10 religiosity variables. Individual variable values each ranged 1 to 4 with the composite variables

(ReligCurrent and ReligPreCol) value having a maximum range from 10 to 40. To create the composite variable, individual variable values of responses are summed.

Reviewing the composite variable for normality, I inspected the skewness, or symmetry of the variable's distribution, and the kurtosis, or peakedness of the variables' distribution. For both the ReligCurrent and ReligPreCol the skewness and kurtosis values approached 0, which implies normal distributions. Additionally, the histograms for both variables (Figure 3.1 and 3.2) visually are roughly normal in their distributions. Meeting the assumption of normality, both religiosity and pre-college religiosity are appropriate for use in statistical analysis. It is relevant to note, that the initial review finds an increase in level of religiosity from pre-college to current, which will be examined further in Chapter 4.

Figure 3.1. Current Religiosity Histogram

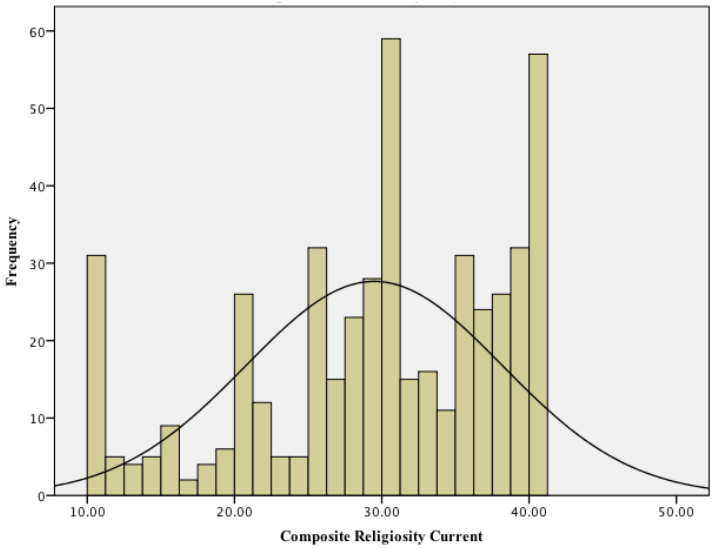
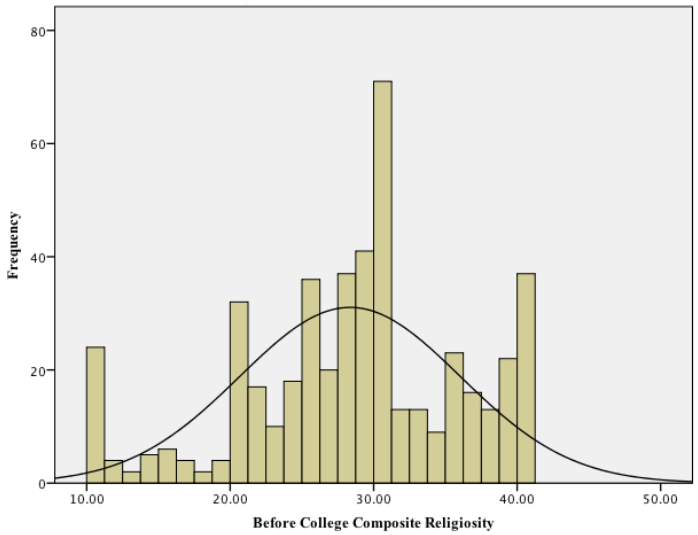


Figure 3.2. Pre-College Religiosity Histogram



Predictor Variables

Reviewing the descriptives for individual predictor variables (the high-impact practices) showed that individual engaged all of the high-impact practices with a high of approximately 84% participating in on-campus liturgy and common intellectual experiences. At the same time, only about 40% of respondents were engaged in learning communities, faculty-directed research, or spiritual direction, while a low of 28.4% participated in the Ignatian Examen (Table 3.2). Distributions were normal for frequency of participation in the AAC&U high impact practices, the AJCU high impact practices, and the combined high impact and Jesuit high impact practices (Figure 3.3-3.5). The level of participation of respondents in these practices supports the theory that students are indeed participating in the group of AAC&U and AJCU high impact practices at Jesuit colleges and universities in the United States. Had individuals not engaged in these practices, it would be challenging to attempt to study any potential impact of the engagement in these practices.

Table 3.2
Respondent Participation in High Impact Practices

High Impact Practice (HIP)	Participation *(n=483)*
Association of American Colleges & Universities (AAC&U)	
Common	83.6%
Global	74.9%
Writing	72.9%
Service Learning	62.7%
Internship	62.5%
Capstone	60.0%
First-Year Exp.	59.0%
Learning Com.	41.6%
Research	37.3%
Association of Jesuit Colleges and Universities (AJCU)	
Liturgy	84.3%
Faith/Justice	82.4%
Retreat	66.5%
Spiritual Ex.	48.0%
CLC	43.7%
Spiritual Dir.	40.6%
Examen	28.4%

Figure 3.3. AAC&U HIP Total Participation Frequency

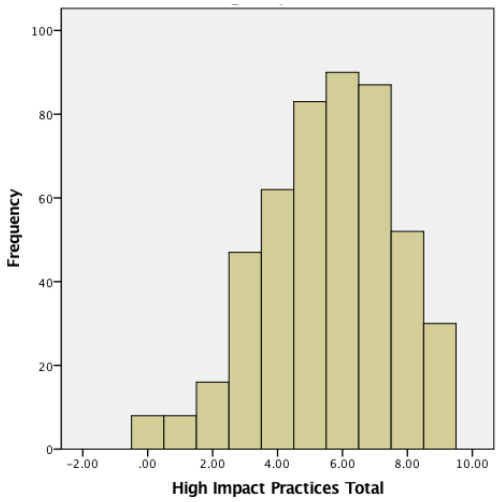


Figure 3.4. AJCU HIP Total Participation Frequency

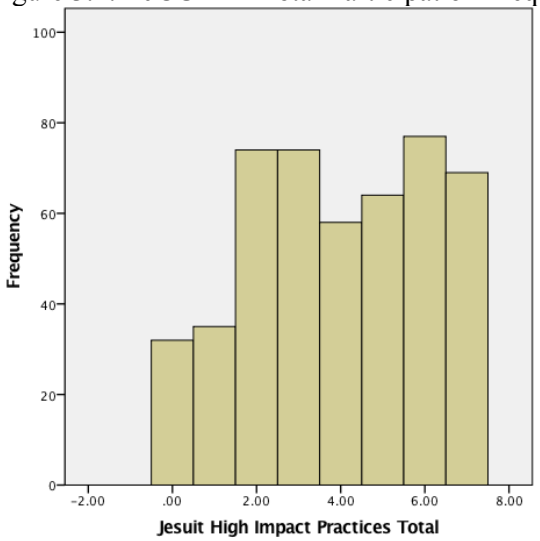
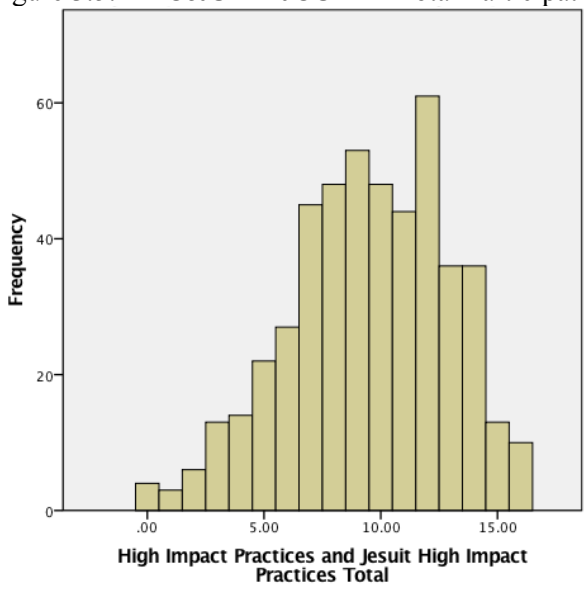


Figure 3.5. AAC&U + AJCU HIP Total Participation Frequency



Of the 483 respondents, 32 did not participate in the any of the seven AJCU high impact practices and eight did not participate in any of the nine AAC&U high impact practices (Figure 3.3-3.4). However, only four did not participate in either any AJCU or any AAC&U high impact practices (Figure 3.5). On average, individuals participated in more than half of each of the AAC&U and AJCU high impact practices (Table 3.3). At the same time, respondents participated in an average of 9.5 of the possible 16

practices, with it being most common for individuals to participate in 12 of the 16 total high impact practices.

Table 3.3
AAC&U HIP, AJCU HIP, and Total HIP Participation

HIP	*n*	*M*	*SD*	Median	Mode	Range	
						Potential	Actual
AAC&U Total	483	5.55	2.02	6	6	0-9	0-9
AJCU Total	483	3.94	2.13	4	6	0-7	0-7
AAC&U + AJCU Total	483	9.49	3.39	10	12	0-16	0-16

Control Variables

As noted previously, the control variables for this research split into four categories: 1) demographics (sex, race, and birth year); 2) pre-college experiences (financial status, parent or guardian average education level, type of high school attended, parental support of faith life, and pre-college religiosity); 3) in-college experiences (major and hours of work for pay); and 4) current experiences (financial status, relational status, and number of children).

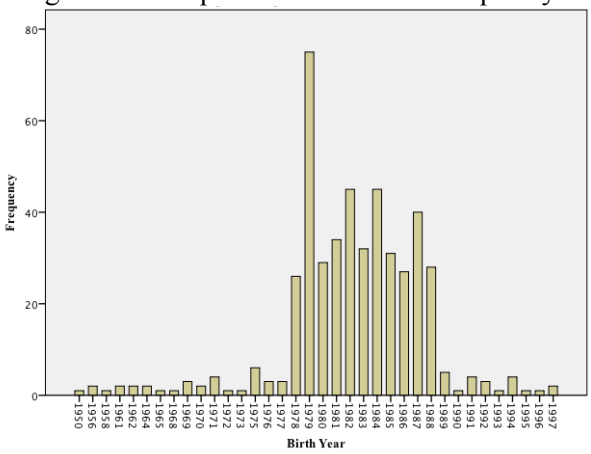
Demographic controls. A review of demographic control variables shows 336 of the 483 respondents as female, 145 male, with two not stating a sex. Looking at sex cross-tabulated with ethnicity (Table 3.4), the majority of respondents were white female (290), with the second largest group of respondents being white males (122). The second largest ethnic group of respondents was Latino (49), followed by Asian or Asian American (36), and then Black or African American (11). Thirty-four respondents selected two or more ethnicities (Table 3.4), while one individual did not select any ethnicity.

Table 3.4
Respondent Ethnicity Cross Tabulated with Sex

Ethnicity	*n*	Percent Female Among Ethnic Groups	Percent of Total Respondents Selecting Female
White	412	70.4%	60.3%
Latino/a	49	75.5%	7.7%
Asian/Asian American	36	58.3%	4.4%
Black/African American	11	72.7%	1.7%
Hawaiian/Pacific Islander	8	37.5%	0.6%
Native American	2	100%	0.4%
None Selected	1	0%	0%
Total	481		69.9%
Number of Ethnicities Selected			
1 Ethnicity Selected	446	70.2%	65.1%
2+ Ethnicities Selected	34	64.7%	4.8%

Birth years of respondents (Figure 3.6) were predominantly clustered between 1978 and 1988 (412 of 469 noted a birth year). This was expected, as the target population was individuals who graduated between 2000 and 2010 and this range of birth years are those of the typical traditional-aged students beginning college at approximately 18 and graduating approximately four years later at 22. Individuals outside of this range are the more exceptional cases, with two individuals born in 1997 being the most exceptional, and though not impossible the low likelihood implies potential error by these respondents.

Figure 3.6. Respondent Birth Year Frequency



Pre-college controls. Respondents' pre-college experiences included the majority growing up in households with average parental education of a college degree or higher and with "about average" or higher financial status (Table 3.5). Overall, those individuals whose parents had higher levels of education were less likely to note an experience of poor or varied financial status.

Table 3.5
Respondent Financial Status Pre-College Cross Tabulated with Average Parent/Guardian Highest Level of Education

Level of Education	Poor	Varied	About Average	Well Off	Total (*n=444*)
Completed High School or Less	3.8%	1.4%	7.0%	0.2%	12.4%
Some College	3.6%	2.3%	17.6%	6.5%	30.0%
Completed College or More	2.5%	1.1%	31.1%	23.0%	57.7%
Total	9.9%	4.7%	55.6%	29.7%	100%

This degree of privilege represented by the majority of respondents was mirrored in the majority of them attending private high schools (Figure 3.7). Of those attending private high schools, 200

attended Catholic non-Jesuit and 58 attended Jesuit schools. Potentially related, the majority of respondents also noted "a great deal" of encouragement for their faith life pre-college (Table 3.6). However, only 66% of those who received "a great deal" of encouragement experienced a high level of religiosity pre-college (replicating Plante's media split leveling). As a whole, 54% of the respondents experienced a high level of religiosity pre-college.

Figure 3.7. Type of High School Attended

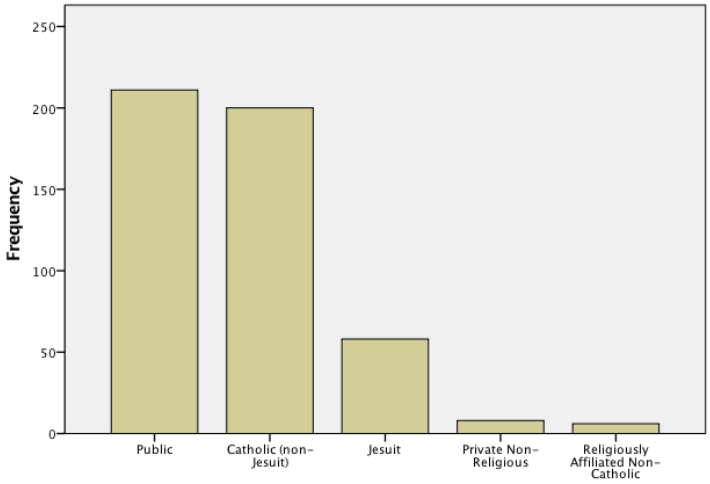


Table 3.6. Respondent Parental Encouragement of Faith Life Pre-college Cross Tabulated with Individual Pre-college Religiosity (Low/High Median Split)

Level of Religiosity	Pre-college parental encouragement level				Total (*n=479*)
	Not at all	Slightly	Somewhat	A Great Deal	
Low Religiosity	4.2%	7.9%	14.4%	19.6%	46.1%
High Religiosity	0.8%	1.3%	13.6%	38.2%	53.9%

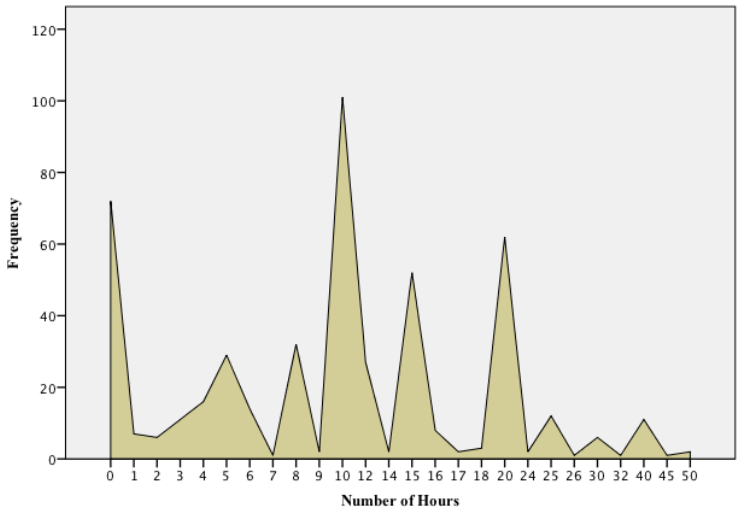
In-college controls. A majority of respondents (17.4%) graduated in 2001(Appendix C), with an otherwise reasonable spread of graduation years among the respondents. Given the liberal tradition of Jesuit education and the emphasis in these institutions on the liberal arts, the majority

of respondents (71%) graduated with degrees in humanities, social sciences, sciences, and creative arts, suggesting a reasonable representation of majors in the population of respondents (Table 3.7). During their studies, 75% of respondents noted working on- or off-campus while in college, with 61% working 10 or more hours and 20% working 20 or more hours (Figure 3.8).

Table 3.7. Respondent by Major
(n=451)

Major	Total
Arts & Sciences (A&S)	
Humanities	33.0%
Social Sciences	27.3%
Sciences	7.8%
Creative Arts	2.9%
Total A&S	71%
Non-A&S	
Business	14.2%
Engineering	2.2%
Nursing	1.3%
Other	11.3%
Total Non-A&S	29%

Figure 3.8. Hours Per Week of Work for Pay While in College



Current controls. The majority of respondents (~65%) noted that they are currently married, with the majority of respondents having 1 or more children (~54%). The second largest group of respondents has never been married (Table 3.8). A notable minority of respondents are living unmarried with a partner and a very small number of respondents have experienced divorce.

Table 3.8
Respondent Number of Children Cross Tabulated with Relational Status

	Number of Children				
Relational Status	0	1	2	3+	Total *(n=483)*
Married	13.5%	14.1%	23.0%	14.3%	64.8%
Never Married	24.6%	0.4%	0.2%	0	25.2%
Living with a Partner	7.0%	0.6%	0.2%	0	7.9%
Other[a]	0.6%	0.4%	0.6%	0.4%	2.1%

[a] Other includes widowed, divorced, or separated

Currently, 438 of the respondents note an average or higher financial status (Table 3.9). The overall response regarding current financial status among respondents is similar to responses regarding pre-college financial status with a slightly higher percentage of respondents noting about average or well off (from 85.3% to 90.6%) and about half as many noting a financial status of poor. Given that these respondents have attended college, this is reasonable. It is likely that the relational and financial stability of this group of respondents relates to the stability of the middle adult period, a reason why this population was selected for this research.

Table 3.9
Respondent Current and Pre-College Financial Status (n=483)

Financial Status	Pre-College	Current
Poor	10.1%	4.6%
Varied	4.6%	4.8%
About average	56.3%	60.0%
Well off	29.0%	30.6%

The current faith practice of this group of respondents is dominated by individuals who identify as Catholic (Table 3.10). Additionally, the majority was also Catholic pre-college. Though a clear majority of respondents identified pre-college and currently as Catholic, there was a decrease in overall identification as Catholic by 9.7% from before college to present. Of that decrease, 6% was among females and 3.7% was among males. At the same time, the largest group increases were among the Agnostic or Atheist females (increase of 3.5%) and males (increase of 2.4%).

Table 3.10
Faith Practice Pre-College and Current by Sex

Faith	Sex	Pre-College *(n=481)*	Current *(n=481)*
Catholic	Female	56.5%	50.5%
	Male	24.7%	21.0%
Protestant	Female	4.8%	3.5%
	Male	1.6%	2.3%
Agnostic or Atheist	Female	2.9%	6.4%
	Male	1.8%	4.2%
Nothing Particular	Female	3.3%	5.0%
	Male	0.6%	1.0%
Something Else	Female	2.3%	4.4%
	Male	1.2%	1.5%

Conclusion

Despite a diversity of levels of religiosity (dependent variable) and participation in AAC&U and AJCU high impact practices (independent variables), this sample is limited in some areas of diversity. The majority of this group of respondents currently identify as white (85.7%), Catholic (71.5%), and female (69.9%), and the majority completed degrees in liberal arts (71%), worked in college (75%), are married (64.8%), have children (54.3%), and are currently financially stable (90.6%). Overall, it is challenging to know if these demographics and experiences replicate those of the population of interest for this research because of the limited data available on this population. Based on the data from the AJCU 2014 *Fact File,* there are more Catholic, white females in this group than the group from which the sample was drawn (77% white, 60% Catholic, and 57% female), however as noted previously, the ability to know the accuracy of these population demographics is limited.

CHAPTER 4

This chapter provides responses to the research questions at the center of this research study based on analysis of data provided by 483 respondents who completed the online self-administered survey between October 7 and November 29, 2019. Respondents graduated from U.S. Jesuit Colleges or Universities between 2000 and 2010.

Because of potential sample bias, this analysis is not generalizable to the population of all alumni of Jesuit institutions. Rather, findings indicate potential relationships between participation in the core experiences of Jesuit higher education and adult religiosity. Adult religiosity relates directly to the purpose of Jesuit higher education, which is to graduate students committed to lives of active faith. As research on the strength of religiosity of alumni of Jesuit higher education does not extend meaningfully beyond the analysis of specific cases of notable alumni of these institutions (AJCU, 2017b), this research seeks to lay a foundation for addressing this gap in the research. This study does so by asking two interrelated research questions: 1) What is the level of religiosity among alumni of U.S. Jesuit higher education in middle adulthood in comparison to the pre-college level of religiosity; and 2) Is there a relationship between U.S. Jesuit higher education middle adult alumni levels of religiosity and past participation in "high-impact" undergraduate educational experiences?

Research Question 1

To respond to the question of the level of religiosity of middle-adult alumni of U.S. Jesuit higher education, I review each of the individual variables of the religiosity construct and then, the composite measure.

As explored in Chapters 2 and 3, the Santa Clara Strength of Religious Faith Questionnaire (SCSORFQ) is a well-tested, valid, and reliable, 10-item instrument designed to

measure the construct of religiosity. Each item utilizes a unidirectional, 4-point Likert scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree) and the composite score for each respondent is the sum of the 10 individual scores. Respondents can receive 1 to 4 score on each individual item and therefore a summed score of 10 to 40 in the composite measure. For current religiosity, the mean of all respondents in the sample was 29.48 with a standard deviation of 8.71 (Table 4.2). Before moving to evaluating composite religiosity, I first review the individual item changes from pre-college to current (Table 4.1).

Over 70% of pre-college respondents agreed or strongly agreed that their religious faith was extremely important, considered themselves active in their faith or church, believed that their faith was an important part of who they were as a person, enjoyed being around others of their faith, and looked to their faith as a source of comfort. Daily prayer had the lowest percentage of agree or strongly agree among responses regarding pre-college faith. Overall, the percentage of agreement and strong agreement on the 10 individual items presented a picture of strong and active pre-college faith lives among respondents.

Item responses based on current faith lives (Table 4.1) saw an increased number of respondents who noted agree or strongly agree on nine of the ten items. The only item that had a decrease in agree or strongly agree from pre-college to current was active in faith or church, which decreased by more than 15%. Given responses to questions that demonstrate clear growth of engagement in faith, it is likely that individuals focused more on the "active in church" wording of the item then on the "active in faith" aspect of the item. Overall, engagement with institutional churches was not examined as part of this study, however, the response to this item seems to suggest that as a group, respondents currently feel less connected to the institution of church than at the pre-college level. Though the comparison of percentages of participants

agreeing with the items offers some understanding of the changes in faith from pre-college to current, a paired sample mean comparison allows for statistical conclusions.

Table 4.1
SCSORFQ Individual Item Responses for Pre-College and Current Religiosity

Individual Items Current (pre-college) [Item short name]	Pre-College *(n = 480)*		Current *(n = 483)*			
	Agree	*M*	Agree	*M*	*t*	*d*
My religious faith is(was) extremely important to me. [faithimportance]	72.2%	2.9	74.5%	3.03	3.05**	0.14
I pray(ed) daily. [dailyprayer]	48.2%	2.53	55.0%	2.63	2.19*	0.10
I look(ed) to my faith as a source of inspiration. [faithinspiration]	69.4%	2.82	72.3%	2.95	2.97**	0.14
I look(ed) to my faith as providing meaning and purpose in my life. [faithpurpose]	66.8%	2.82	73.7%	3.02	4.17**	0.19
I consider(ed) myself active in my faith or church. [faithchurch]	72.0%	2.92	56.7%	2.67	-4.91**	-0.22
My faith is(was) an important part of who I am(was) as a person. [faithwhoiam]	73.0%	2.93	76.6%	3.05	2.73**	0.13
My relationship with God is(was) extremely important to me. [faithrelategod]	68.2%	2.85	77.3%	3.07	5.08**	0.23
I enjoy(ed) being around others who share my faith. [faithpeople]	76.6%	2.91	80.9%	3.01	2.74**	0.13
I look(ed) to my faith as a source of comfort. [faithcomfort]	72.6%	2.89	79.5%	3.10	5.08**	0.23
My faith impacts(ed) many of my decisions. [faithdecisions]	65.7%	2.79	71.6%	2.94	3.33**	0.15

Note. For this table, agree is a consolidation of all those who responded "agree" or "strongly agree."
**p<.01; *p<.05, in a two-tailed test.

Paired sample *t*-tests, revealed statistically significant changes in each of the ten items from pre-college to current. The mean of nine items significantly increased while one item mean significantly decreased. The decrease was in the mean of "I consider(ed) myself active in my faith or church" (faithchurch). Though the means of all pre-college items were below 3 (agree) pre-college, six items for current had means above 3. The lowest pre-college mean was in item "I pray(ed) daily" (dailyprayer). This item, however, showed the largest current mean increase (0.1).

The largest mean changes were the mean increases of "My relationship with God is(was) extremely important to me" (faithrelategod) and "I look(ed) to my faith as a source of comfort" (faithcomfort). These two variables also had the largest effect size at $d = 0.23$ (d = change in mean divided by standard deviation). Overall, faithcomfort had the highest current mean. Both of these items speak to the relationship of individuals to their God and the role of the faith in their lives.

Pre-college means varied from 2.53 to 2.93, while the range in middle-adult means was 2.63 to 3.10 (Table 4.1). While this observation is not determinative, this information does add texture to the overall picture of faith growth from pre-college to middle-adult. Also informative is that the majority of item means increased. Through factor analysis of the ten items of the SCSORFQ, Plante (1997a; 2002) found it measured a single factor, religiosity or strength of religious faith; thus, is it notable that a single item had a mean decrease. Questions this raises are further examined in Chapter 5.

Reviewing the composite religiosity scores (Table 4.2), the mean religiosity increased from pre-college to the current, middle-adult period. Utilizing a paired-sample t-test this increase was statistically significant [$t(479) = -2.96$, $p<.01$]. Additionally, the effect size (d; mean difference divided by standard deviation) was 0.14, which suggests a small effect; here it is non-determinative in comparison of pre-college and current religiosity as other studies utilizing the SCSORFQ have not previously reported effect size (Cohen, 1988). This overall increase in mean religiosity was not equivalent among sex or religious groupings. Reviewing change among these various groups offers additional opportunity to understand further respondents' experience and to compare effect sizes among the groupings.

The largest group of respondents was current-Catholic female, who were Catholic pre-college as well. For this group of 230 respondents there was a statistically significant mean increase in religiosity of 1.96 with an effect size of 0.28. Currently Catholic females, who were not Catholic pre-college, had the largest statistically significant mean increase at 11.99 and an effect size of 1.45. This group of current Catholic females who were non-Catholic pre-college had the highest religiosity of any other group of respondents. Males identifying currently as Catholic, who identified as Catholic pre-college, made up the second largest group of respondents with 98 members. This group had a statistically significant mean increase of religiosity from pre-college to middle-adulthood with a mean increase of 4.02 and an effect size of 0.60. In comparison to the group of all respondents, this effect size is much larger.

In comparing the pre-college non-Catholic pre-college/current Catholic female group (*n=11)*, the pre-college Catholic/current Catholic male group (*n=98)*, and the pre-college Catholic/current Catholic female group (*n=230)* with the group of total respondents (*n=479),* all mean increases were statistically significant, but all current Catholic groups had larger effect sizes.

The group of individuals who identified as Catholic pre-college and currently as non-Catholic had statistically significant mean decreases among the male, female, and combined sex groups. The largest of these mean religiosity decreases was in males (*n=19)*, with a 7.95 decrease and an effect size of -0.65. At the same time, females in this group (*n=40)* had a statistically significant composite religiosity mean decrease of 4.89 with a -0.59 effect size.

Table 4.2.
Religiosity by Current Faith, Pre-College Faith, and Sex

Faith Practice				Religiosity				
Current	Pre-College	Sex	*n*	Pre-College *M*	Current *M*	*t*	95% CI	*d*
Non-Cath	Non-Catholic	F	53	22.34	21.72	-0.45	[-3.37, 2.13]	-0.06
		M	25	22.56	23.21	0.47	[-2.24, 3.55]	0.09
		Total	79	22.40	22.16	-0.24	[-2.28, 1.78]	-0.03
	Catholic	F	40	26.98	22.09	-3.76**	[-7.52, -2.25]	-0.59
		M	19	26.37	18.42	-2.83**	[-13.85, -2.05]	-0.65
		Total	59	26.78	20.91	-4.65**	[-8.40, -3.34]	-0.61
Catholic	Non-Catholic	M	0					
		F	11	22.91	34.90	4.80**	[6.43, 17.56]	1.45
		Total[a]	12	24.33	34.83	3.85**	[4.49, 16.50]	1.12
	Catholic	F	230	30.52	32.17	4.21**	[0.88, 2.43]	0.28
		M	98	29.37	33.39	5.97**	[2.68, 5.36]	0.60
		Total	329	30.21	32.51	6.60**	[1.62, 2.99]	0.36
All		Total	479	28.35	29.43	2.96**	[0.36, 1.80]	0.14

Note. [a] One individual in the pre-college non-Catholic current Catholic group did not provide a response to "sex". **p<.01, in a two-tailed test.

As stated in Chapter 3 (Table 3.1), among this sample, religiosity and pre-college religiosity have high internal consistency. Given these findings, and the statistical significance (p<.01) found in the paired-sample t-test of the means of the pre-college and current religiosity groups, I confidently conclude that among this sample there was an increase in the levels of religiosity between the pre-college period to present middle-adulthood. Additionally, this mean increase was almost exclusively among individuals who are currently Catholic.

Research Question 2

Overall, the mean religiosity increase among this group of respondents was investigated as potentially related to participation in one of multiple AAC&U of AJCU high impact practices that respondents engaged in during their Jesuit higher education experiences. Regression analysis was employed to better understand this potential relationship.

To analyze the potential relationship between U.S. Jesuit higher education middle-adult, alumni levels of religiosity and participation in "high-impact" undergraduate educational experiences at Jesuit colleges and universities, I conducted ordinary least squares (OLS) multiple regression with the IBM SPSS statistical package. Specifically, I regressed current religiosity (ReligCurrent) on the Association of American Colleges & Universities (AAC&U) and Association of Jesuit Colleges and Universities (AJCU) high-impact undergraduate practices. To conduct this analysis, I utilized two separate regression models. The first model (noted as A below) utilized the total counts of the number of AAC&U high impact practices in which a respondent participated as an undergraduate and the number of AJCU high impact practices in which the respondent participated as an undergraduate. The second model (referred to as B below) utilized each AAC&U high impact and Jesuit high impact as separate variables in the regression. Both regressions utilize the previously noted controls for demographics, pre-college experiences, in-college experiences, and current experiences.

For both of these regressions I entered the control variables and high-impact practices with current religiosity (ReligCurrent) as the dependent variable. Conducting these analyses allowed me to identify a) F-Change values for each model and the R-Square (R^2) values for the control variables; b) the control variables and the total participation in AAC&U and AJCU (model A); and c) the control variables and the participation in the individual AAC&U and AJCU practices (model B). Model A [13.56 (2, 392) $p<.001$] and model B [2.69 (16, 378) $p<.001$] both had statistically significant F-change values indicating that these models were both statistically significant models (Table 4.5). This implies that the total participation in the AAC&U and AJCU high impact practices as well as the individual AAC&U and AJCU high impact practices do serve as statistically significant predictors of religiosity. The R^2 of the control variables alone was 0.62,

the model A R^2 was 0.64, and the model B R^2 was 0.66. This means that the total participation in the AAC&U and the total participation in the AJCU high impact practices represented in regression model A accounts for 2% (based R^2 change) of the variance in current religiosity. At the same time participation in individual practices, accounts for 4% (based R^2 change) of the variance in current religiosity in regression model B. Though these are potentially meaningful conclusions, it was necessary to check that the regression assumptions were met.

To check that the regression assumptions are met, the residuals of linearity, homogeneity of variance, and normality were reviewed. These assumptions were checked by reviewing the scatter plots of the standardized predicted scores with the standardized residuals (Figure 4.1 and 4.2), histograms of the residuals (Figure 4.3 and 4.5), and the P-P plots (Figure 4.4 and 4.6).

Figure 4.1. Model A Scatterplot of Standardized Residuals

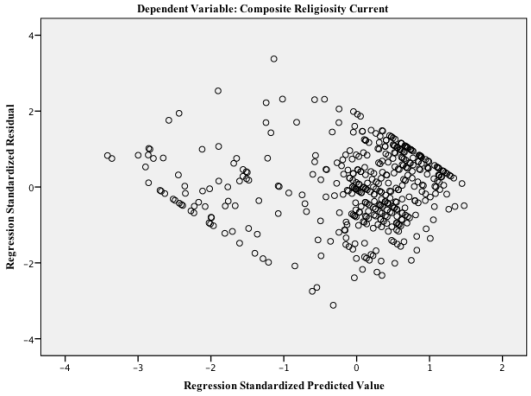


Figure 4.2. Model B Scatterplot of Residuals

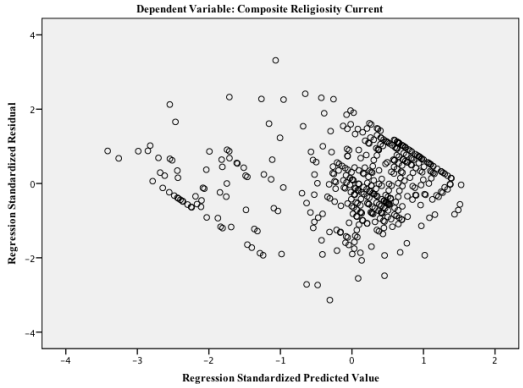


Figure 4.3. Model A Normal P-P Plot of Standardized Residuals

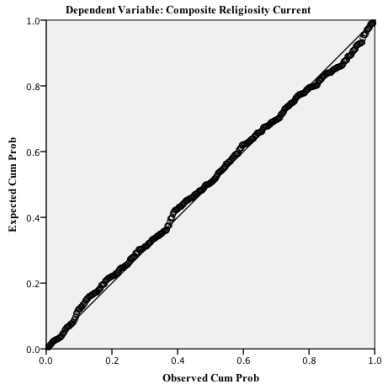


Figure 4.4. Model A Histogram of Standardized Residuals

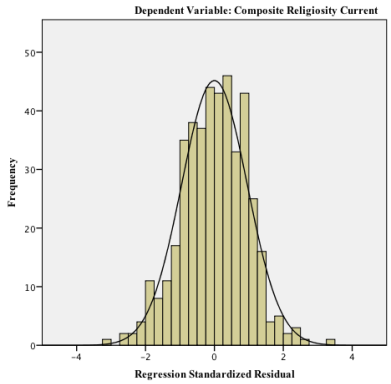


Figure 4.5. Model B Normal P-P Plot of Standardized Residuals

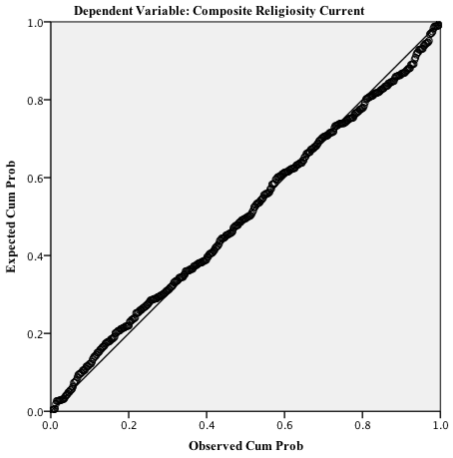
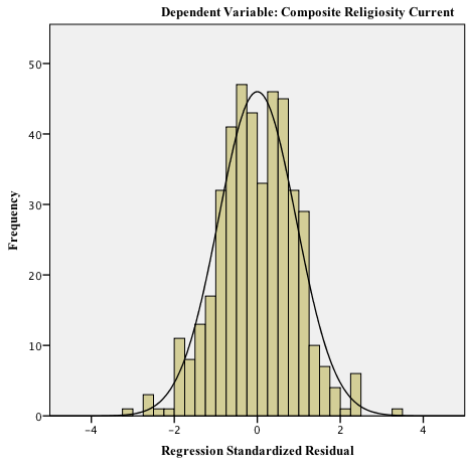


Figure 4.6. Model B Histogram of Standardized Residuals



In reviewing the scatterplots of the standardized residuals, I checked for an approximate scatter of the residuals above and below 0 evenly. I found the residuals in both regression A (Figure 4.1) and B (Figure 4.2) to be approximately evenly scattered and accepted that these residuals met the assumption of linearity. Next, I considered the homogeneity of variance, and again scrutinized the standardized residuals scatterplots. Here I reviewed the consistency of the variance of the residuals and found the residuals variance to be fairly consistent in regression A and B. I accepted that it is likely that the assumption of homogeneity of variance was met in regression A and regression B (especially given the robust nature of the OLS regression). I then

reviewed the histograms and the P-P plots of the residuals of regressions A (Figure 4.3 and 4.4) and B (Figure 4.5 and 4.6). Utilizing the eye test, I looked for the degree of discrepancy from normality in each case. On the histograms the normal curve was drawn, and on the P-P plot the normal line is included. On all graphs the eye test seems to indicate that the assumption of normality is met for regression A and B. As these assumptions are met it is potentially acceptable to utilize these OLS regression to draw conclusions related to this research. Having reviewed and found the assumptions met, it is also important to review the data for potential outliers that might impact the regressions.

The data were examined for potential outliers by reviewing the Cook's distances, specifically looking for Cook's distance statistics >1. A reviewing the top 10 potential outlier statistics by their Cook's distances in both either regression model A or B (Table 13 and 14), I found no significant outliers. As such, I was comfortable moving on with my analysis with the assumption that no cases are exercising extraordinary influence on my regression models.

Table 4.3
Model A Top 10 Outlier Statistics by Cook's Distances

Rank	Case Number	Statistic	Sig. F
1	341	0.14	1
2	279	0.14	1
3	164	0.075	1
4	162	0.054	1
5	345	0.054	1
6	417	0.043	1
7	297	0.038	1
8	336	0.032	1
9	165	0.023	1
10	175	0.022	1

Table 4.4
Model B Top 10 Outlier Statistics by Cook's Distances

Rank	Case Number	Statistic	Sig. F
1	164	0.07	1
2	341	0.065	1
3	279	0.065	1
4	162	0.044	1
5	345	0.037	1
6	417	0.029	1
7	297	0.028	1
8	165	0.026	1
9	175	0.021	1
10	13	0.02	1

I then checked for any potential issues of multicollinearity by reviewing my coefficients collinearity statistics. Specifically, I looked for tolerance levels below 0.10 and VIF levels above 10, but identified no potential multicollinearity problems (Appendix A).

Table 4.5
Predictors of Adult Religiosity

			Model A		Model B	
Variable	*B*	95% CI	*B*	95% CI	*B*	95% CI
Constant	261.37*	[-110.38, 633.11]	476.16*	[102.17, 850.16]	574.79**	[186.45, 964.21]
Demographics						
Birth Year	0.03	[-0.17-0.23]	0.03	[-0.17-0.23]	0.01	[-0.53, 2.21]
Sex	1.07	[-0.31, 2.44]	0.87	[-0.46, 2.21]	0.84	[-0.53, 2.21]
White	2.21	[-0.63, 5.04]	1.47	[-1.30, 4.23]	1.69	[-1.13, 4.50]
Black/Af Am	2.38	[-2.38, 5.04]	2.78	[-1.84, 7.40]	2.83	[-1.86, 7.515]
Latino(a)	2.95*	[0.56, 5.34]	2.45*	[0.12, 4.78]	2.17	[-0.23, 4.57]
Asian/As Am	4.62**	[1.36, 7.88]	4.04*	[0.87, 7.21]	3.93*	[0.71, 7.16]
Native HI/Pac Is	-1.69	[-6.44, 3.06]	-1.84	[-6.45, 2.77]	-1.83	[-6.50, 2.85]
Am Indian/AK Nat	6.14	[-2.38, 14.65]	6.03	[-2.23, 14.29]	6.39	[-1.92, 14.70]
Pre-College						
Parent Avg Ed	0.20	[-0.02, 0.42]	0.17	[-0.05, 0.38]	0.16	[-0.06, 0.38]
Public[a]	1.03	[-0.25, 2.30]	0.75	[-0.50, 1.99]	0.54	[-0.73, 1.81]
Jesuit HS[a]	-0.32	[-2.33, 1.70]	-0.53	[-2.49, 1.42]	-0.61	[-2.58, 1.36]
Relig Aff (Non-Cath.) HS[a]	3.09	[-2.19, 8.37]	2.91	[-2.22, 8.03]	2.83	[-2.39, 8.05]
Private (Non-Relig.) [a]	1.72	[-3.26, 6.70]	2.46	[-2.27, 7.41]	2.71	[-2.23, 7.631]
Par Enc Faith Life	-0.38	[-1.17, 0.41]	-0.32	[-1.09, 0.45]	-0.24	[-1.01, 0.54]
Family Financial	0.18	[-0.91, 0.56]	0.08	[-0.64, 0.81]	0.10	[-0.64, 0.84]
Religiosity	0.37**	[0.28, 0.46]	0.31**	[0.22, 0.40]	0.31**	[0.22, 0.40]
In-College						
Hours Worked	-0.01	[-0.08, 0.06]	0.00	[-0.07, 0.07]	0.00	[-0.07, 0.07]
Social Sciences[b]	-1.05	[-2.51, 0.41]	-0.97	[-2.83, 0.45]	-1.04	[-2.50, 0.42]
Creative Arts[b]	0.48	[-3.15, 4.10]	-0.12	[-3.66, 3.42]	-0.20	[-3.78, 3.38]
Sciences[b]	-2.01	[-4.19, 0.18]	-1.89	[-4.01, 0.24]	-1.83	[-4.01, 0.34]
Business[b]	-1.08	[-2.91, 0.75]	-0.87	[-2.66, 0.93]	-0.933	[-2.81, 0.94]
Engineering[b]	-3.19	[-6.99, 0.62]	-3.15	[-6.84, 0.54]	-3.37	[-7.17, 0.43]
Nursing[b]	-2.48	[-7.30, 2.34]	-2.11	[-6.79, 2.57]	-1.89	[-6.67, 2.88]
Other Acad. Area[b]	-0.30	[-2.23, 1.63]	-0.36	[-2.23, 1.51]	-0.24	[-2.26, 1.77]
Grad. Year	-0.15	[-0.43, 0.13]	-0.26	[-0.53, 0.02]	-0.22*	[-0.57, -0.01]
Current						
Financial	0.01	[-0.87, 0.88]	0.13	[-0.73, 0.98]	0.219	[-0.65, 1.09]
Children	0.14	[-0.44, 0.72]	0.14	[-0.425, 0.71]	0.05	[-0.52, 0.62]
Widowed[c]	8.45*	[1.63, 15.28]	6.77*	[0.11, 13.44]	5.95	[-0.81, 12.70]
Divorced[c]	2.13	[-3.07, 7.32]	2.21	[-2.82, 7.25]	2.06	[-3.10, 7.21]
Separated[c]	5.72	[-5.86, 17.29]	7.91	[-3.35, 19.17]	7.54	[-3.89, 18.98]
Never Married[c]	0.11	[-1.54, 1.77]	0.18	[-1.43, 1.79]	0.06	[-1.57, 1.68]
Living w/ Partner[c]	-0.61	[-2.82, 1.60]	-0.83	[-2.98, 1.32]	-1.09	[-3.26, 1.08]
Protestant[d]	-2.88	[-5.31, 0.45]	-2.08	[-4.46, 0.30]	-2.00	[-4.44, 0.44]
Hindu[d]	-13.03*	[-24.75, -1.32]	-11.47*	[-22.86, -0.08]	-12.20*	[-23.73, -0.66]
Atheist[d]	-17.24**	[-20.33, -14.16]	-15.98**	[-19.03, -12.923]	-16.29**	[-19.43, -13.15]
Agnostic[d]	-14.99**	[-17.21, -12.76]	-13.90**	[-16.10, -11.70]	-13.39**	[-15.65, -11.13]
Something Else[d]	-2.05	[-4.80, 0.70]	-1.38	[-4.05, 1.30]	-1.17	[-3.95, 1.61]
No Particular[d]	-9.77**	[-12.31, -7.23]	-8.77**	[-11.28, -6.27]	-8.60	[-11.179, -6.02]
AAC&U HIP						
Internship					-0.54	[-1.79, 0.72]
Research					-0.27	[-1.48, 0.94]
Global					-0.19	[-1.54, 1.16]
Service Learning					-0.03	[-1.26, 1.21]
Capstone					0.06	[-1.18, 1.29]
First-Year Exp.					-0.77	[-1.96, 0.42]
Common					0.26	[-1.33, 1.86]
Learning Com.					0.60	[-0.57, 1.77]
Writing					-0.68	[-2.09, 0.74]
Total AAC&U Par			-0.21	[-0.52, 0.08]		
AJCU HIP						

Retreat					1.13	[-0.43, 2.69]
Spiritual Ex.					-0.98	[-2.40, 0.45]
Examen					2.73**	[1.19, 4.26]
Faith/Justice					0.32	[-1.37, 2.01]
CLC					1.22	[-0.21, 2.66]
Liturgy					0.15	[-1.82, 2.13]
Spiritual Dir.					0.99	[-0.43, 2.70]
Total AJCU Par		0.81**	[0.51, 1.12]			
R^2	0.62	0.64		0.66		
F	16.62**					
$R^2 \Delta$		0.02		0.04		
F Δ		13.56**		2.69**		

Note. CI = Confidence interval. a = reference group Catholic high school. b = reference group is humanities. c = reference group is married. d = reference group is Catholic. *p<.05, **p<.01

Using the coefficients tables (Tables 15), I reviewed the *Z*-statistics and their accompanying *p*-values to check for the significance of each predictor variable. In regression model A, I found that the total AJCU high impact practices have a *B* value of 0.81 which is statistically significant ($p < .01$). This would imply that for each additional practice participated in there would be a corresponding increase in current religiosity of 0.81 points on the religiosity scale. Reviewing model B, I found that the individual AJCU high impact practice of the Examen of Conscience (Examen) was statistically significant with a *B* value of 2.73, implying that participation in the Examen increased current religiosity by 2.73 ($p < .01$) points on the religiosity scale.

In model A, among the control variables, I found being Latino/Latina ($B = 2.45$), Asian or Asian-American ($B = 4.04$), Hindu ($B = -11.47$), Catholic, Atheist ($B = -15.98$), Agnostic ($B = -13.90$), practicing no particular religion ($B = -8.77$), married, or widowed ($B = 6.77$) to be statistically significant. The significant negative relationships between being Atheist, Agnostic, or practicing no particular religion and current Religiosity is one that could be expected due to the construct being built around an idea of strength of religiosity that includes a majority of items that relate to God. Additionally, the negative relationship between being Hindu and current Religiosity also seems to make reasonable sense given the item make-up of Religiosity. The size of these negative relationships also seems to be reasonable given the dependent variable. The positive

relationship between being Latino(a) or being Asian or Asian-American with current Religiosity is unexpected, and certainly warrants further study. This is especially the case as being Latino(a) relates, in model A, to 2.45 points on the religiosity scale increase in current Religiosity and being Asian or Asian-American relates to 4.04 points on the religiosity scale increase in current religiosity.

In model B, the control variables of being Asian or Asian-American (B = 3.93) or being Hindu (B = -12.20), Catholic, Atheist (B = -16.29), or Agnostic (B = -13.39) and graduation year (B = -0.22) were found to be statistically significant. Again, the negative relationships between being Hindu, Atheist, or Agnostic and current religiosity were somewhat expected. The negative relationship between graduation year and current Religiosity, is another area that deserves further scrutiny, especially as birth year did not have a statistically significant relationship with current Religiosity. This offers a possibility that there may have been a specific experience, or group of experiences, between the earlier years of the graduation range and the later that had a potential impact on individual's faith.

In both models, I found pre-college religiosity to be statistically significant at the $p < .01$ level with $B = 0.31$. This would imply that for each additional point on the religiosity scale of individuals' pre-college Religiosity would correspond to a 0.31 increase in current Religiosity. Theoretically, this was to be expected, and it is likely that pre-college religiosity will consistently be one of the strongest predictors of current Religiosity. However, further research, including a longitudinal research design with a control group, would support the likelihood of this finding in this specific population.

The significance of each of these variables should considered in light of the n for each group, as Asian/Asian-American, Hindu, Atheist, and Agnostic were small sub-groups of this

group of respondents. It appears that it is especially important to consider pre-college religiosity and being Catholic as everyone reported pre-college religiosity and the large majority of respondents are Catholic.

Analysis of regressions models A and B suggest specific conclusions. For the regression of religiosity on the total number of AAC&U and AJCU high impact practices in which respondents participated, the model was statistically significant. Furthermore, the total number of AJCU high impact practices in which respondents participated was a significant independent variable in this regression model with a positive relationship with the dependent variable religiosity. For the regression of religiosity on AAC&U and AJCU high impact practices individually, this model was also significant, and participation in the specific practice of the Ignatian Examen of Conscience individually showed a statistically significant positive relationship with religiosity.

In response to the second research question, I concluded that in this sample there was a statistically significant relationship between U.S. Jesuit higher education middle-adult alumni levels of religiosity and participation in "high-impact" undergraduate educational experiences at Jesuit colleges and universities.

Given the statistically significant, positive relationship between total participation in AJCU high impact practices and the significance of only the Examen of Conscience individually, I reviewed participation in the Examen in relationship to participation in other high impact practices. Table 4.6 compares pre-college and current religiosity by participation in the Examen and one or more other AJCU high impact practices and non-participation in the Examen and the Examen and select other AJCU high impact practices. AJCU high impact practices selected for

combined analysis with the Examen are those that had the highest coefficient scores after the Examen: CLC, Retreat, and Spiritual Dir. (Table 4.5).

Table 4.6
Religiosity by Participation in Select AJCU HIP

AJCU HIP	*n*	Religiosity		*t*	95% CI	*d*
		Pre-College *M*	Current *M*			
Participated in[a]						
Examen	136	30.29	33.87	5.60**	[2.31, 4.84]	0.48
Examen + CLC	107	30.79	34.27	4.58**	[1.97, 4.97]	0.44
Examen + Retreat	128	30.22	34.01	5.65**	[2.46, 5.11]	0.50
Examen + CLC + Retreat	105	30.72	34.27	4.62**	[2.02, 5.07]	0.45
Examen + CLC + Retreat + Spiritual Dir.	85	30.98	34.73	4.22**	[1.98, 5.52]	0.46
Did not participate in[b]						
Examen	343	27.58	27.67	0.21	[-0.76, 0.94]	0.11
Examen + CLC	241	25.85	26.25	0.86	[-0.52, 1.31]	0.06
Examen + Retreat	154	25.09	25.91	1.45	[-0.30, 1.95]	0.11
Examen + CLC + Retreat	138	24.64	25.33	1.13	[-0.52, 1.89]	0.10
Examen + CLC + Retreat + Spiritual Dir.	128	24.39	25.22	1.30	[-0.44, 2.09]	0.11
All	479	28.35	29.43	2.96**	[0.36, 1.80]	0.46

Note. a = in this sections individuals participated in the noted AJCU HIP and may or may not have participated in others. b = in this section individuals did not participate in the noted AJCU HIP and may or may not have participated in other. **p<.01, in a two-tailed test.

Table 4.6 notes the pre-college and current mean levels of religiosity, compares means, and shows the effect size among individuals who participated in: the Examen; the Examen and CLC; the Examen and retreats; the Examen, CLC, and retreats; and the Examen, CLC, retreats, and spiritual direction. (Although individuals may have participated in other AJCU HIPs, they at least participated in each noted practice.) These AJCU HIPs are presented along with the changes of religiosity among those individuals that did not participate in the stated practices. Those groups that participated in the Examen and the Examen along with other practices all had higher pre-college levels of religiosity and all had statistically significant increases in mean for religiosity with 0.44 - 0.50 effect size. Those who did not participate in the Examen or the Examen along

with the other noted practices, no matter what else they did participate in, had 24.39 - 27.58 pre-college religiosity and 25.22 -27.67 current religiosity, with none of these groups having statistically significant mean changes.

The data presented in table 4.6, add additional context and texture to the regression analysis that concluded that participation in more AJCU high impact practices, in general, had a positive impact on current religiosity and that participation in the Examen, specifically, had a positive impact on current religiosity. However, as no individuals participated in the Examen in the absence of participation in other AJCU high impact practices, it would beneficial to further study how the Examen is shared with students at Jesuit institutions. It is likely that engaging in a specific "suite" of AJCU high impact practices, offers the greatest potential to impact an individual's strength of religious faith. There does exist the possibility that the best "suite" of practices to engage an individual student varies by context and individual. Developing a tool for assessing the best suite of high impact practices, to achieve the largest increase in strength of religious faith, could allow for tailoring opportunities to students. However, these data seem to indicate that the Ignatian Examen of Conscience should be a component of many of these "suites" of opportunities.

CHAPTER 5

Currently, the 27 U.S. Jesuit colleges and universities[1] are in the midst of self-assessments based on a common self-evaluation instrument that was developed and agreed upon by the university presidents in 2012 (Association of Jesuit Colleges and Universities, 2012). The instrument provides a framework that includes seven characteristics that provide evidence of an institution living the commitment to being truly Jesuit institutions. The preface to the instrument makes special note of the importance of committing to this work of self-evaluation in the unique context of each individual institution and in the overall context of the "American academy." The preamble to this document speaks directly to their identity as Jesuit Catholic universities, requiring that they be both excellent as universities and that they stay true to their primary mission to educate and form "students in such a way and in order that they may become men and women of faith and of service to their communities" (p. 3). This statement is a summary of the nearly 500-year goal of Jesuit Catholic education and an affirmation by Jesuit university presidents that their universities continue to pursue this specific purpose. Building upon this foundation, the document then provides an instrument with concrete questions about what exactly is occurring at these institutions that would provide evidence that this purpose is being realized. This self-evaluation instrument is a potentially powerful tool, yet it does have limitations. By itself this tool does not provide institutions a method for evaluating what impact their institutions are having on the lives of the students who attend.

I began this study by gathering data on the potential impact of these institutions on the formation of men and women of faith. Utilizing the literature on Jesuit Catholic higher education, I have argued that the core goal of Jesuit education is the formation of people committed to lives

[1] Wheeling Jesuit University ceased being identified as Jesuit in 2019, but its alumni were included in this study.

of active and engaged faith. With this central purpose established, I then gathered data on the potential impact of these institutions on a key desired outcome of Jesuit education: impacting individuals' adult engagement in religious faith, or religiosity. I utilized the American Association of Colleges and Universities (AAC&U) nine high impact practices and seven additional Jesuit Catholic (AJCU) high impact practices to look at what uniquely Jesuit and Catholic undergraduate experiences individuals are engaging in at these institutions. OLS multiple regression enabled investigation of potential relationships between students' engagement in these AAC&U high impact and AJCU high impact practices and their middle-adult levels of religiosity. I measured individuals' religiosity using the Santa Clara Strength of Religious Faith Questionnaire (SCSORFQ). This instrument was developed on a strong conceptual model, derived from the literature in the field, has been thoroughly psychometrically tested, is easy to use, and has been utilized previously in Jesuit institutions. As there is neither literature on the levels of religiosity of this group nor on the potential relationship between engagement in high impact practices and adult religiosity, this study is exploratory in nature.

In researching a population whose religiosity had not been studied, it was important to establish an initial picture of the level of religiosity before exploring the potential relationship between engagement in high impact and Jesuit high impact practices and their adult religiosity. As such, this research set out to investigate two research questions:

1) What is the level of religiosity among alumni of U.S. Jesuit higher education in middle adulthood in comparison to the pre-college level of religiosity?
2) Is there a relationship between U.S. Jesuit higher education middle adult alumni levels of religiosity and participation in "high-impact" undergraduate educational experiences?

In comparing pre-college and middle-adult levels of religiosity, this study found that this group of alumni of Jesuit institutions is more religious than they were before college. This increase in level of religiosity is related to participation in specific AJCU high impact practices. This research has therefore provided evidence that there is a strong relationship between U.S. Jesuit higher education and the strength of religious faith and the engagement in religious faith of their alumni. Though more conclusions can be drawn from this research, the singular importance of this conclusion to institutions of Jesuit higher education in the United States is essential; there is a basis for the claim that the mission to form individuals of strong and engaged religious faith is indeed being realized. This research speaks to the very heart of the individual and social impact of these institutions. The findings from this study indicate that the specific Jesuit Catholic experiences that have been intentionally woven into the educational fabric of these institutions are having the desired effects, at least on some graduates.

This research has additionally concluded that individuals who are Catholic experience greater religiosity than those who are not. Established initially for Catholics, informed by the Jesuit, Catholic tradition, and carrying out a Jesuit, Catholic model of education, that Catholics are more impacted is not surprising.

Overall, this research has added a perspective to the larger understanding of the relationship between higher education and religiosity. This study continues to enhance the body of research that challenges the earlier belief that increased levels of education correlate directly with decreased levels of religiosity (Albrecht & Heaton, 1984; Beckwith, 1985; Caplovitz & Sherrow, 1977; Funk & Willits, 1987; Johnson, 1997). This study lends support to current research findings that the relationship between level of religiosity, or spirituality, and higher education is much more nuanced (Astin et al., 2011; Ganzach & Gotlibovski, 2014; J. P. Hill,

2009, 2011; Lee, 2002; McFarland et al., 2011; Mooney, 2010; Schwadel, 2011, 2016; Uecker et al., 2007). Lee (2002) and Schwadel's (2016) studies, in particular, offer both support and contrast to the present study. Lee found that despite changing religiosity during college, more individuals experienced faith growth than faith decline, which supports the conclusion in the present study that faith of college graduates can grow despite higher levels of education. This directly contrasts with Schwadel's conclusion that students who complete college decrease in frequency of prayer and overall religiosity.

Studying prayer life, the Pew Research Center has supported Schwadel's research in finding that overall, 59% of Catholics pray daily, but only 20% of Catholics aged 30-49 pray daily, and 16% of Catholics with a college degree or more education pray daily (2014). My research found that 66.3% of Catholic Jesuit alumni aged approximately 30-41 pray daily. This percentage is higher than the overall population of Catholics they studied; it is higher than the percentage in the identified age group; and it is higher than others with similar levels of education. Though more research is needed, the current study lends itself to a hypothesis that Jesuit higher education has a strong positive impact on Catholic alumni's daily prayer. Put differently, U.S. Jesuit higher education is associated with an increase in Catholics' prayer life, not only in comparison to other forms of higher education, but also against age effects.

The Relationship Between Pre-College Religiosity, Participation in AJCU HIP, and Current Religiosity: An Argument for Pre-College Religiosity in Admissions

This research found evidence that individuals that are coming to Jesuit colleges and universities are fairly religious pre-college and even more religious in middle-adulthood. Furthermore, pre-college Catholics tended to have higher levels of pre-college religiosity in comparison with non-Catholics (Table 12). It also identified that individuals who were Catholic

pre-college tended to have higher levels of participation in AJCU high impact practices than those who were non-Catholic pre-college. These data strongly suggest that individuals who are pre-college Catholic participate in a higher number of AJCU high impact practices than pre-college non-Catholics. Additionally, pre-college Catholics, who are currently Catholic, tended to have a larger mean religiosity increase from pre-college to present if they participated in four or more AJCU high impact practices than those who participated in three or fewer AJCU high impact practices.

Both pre-college Catholic/current Catholic individuals who participated in four or more AJCU high impact practices groups had statistically significantly larger increases in religiosity than those who participated in three or fewer AJCU high impact practices. Analyses of these data lend themselves to the hypothesis that, among individuals attending Jesuit higher education, being Catholic pre-college relates to pre-college religiosity, which relates to the number of AJCU high impact practices in which one participates during college. Additionally, regression analyses show that the the number of AJCU high impact practices in which one participates has a potential effect on the adult level of religiosity, which relates to the likelihood of one being Catholic as an adult.

As private, Jesuit, Catholic institutions of higher education, Jesuit colleges and universities have a right to and a significant interest in maintaining a specific type of education and admitting students that are likely to benefit most from the experiences offered. This research offers data that support the idea that to enhance the impact of AJCU high impact practices on religiosity, Jesuit institutions should consider a student's religiosity before college. However, in the absence of available data on religiosity, being Catholic before college offers a degree of predictability regarding the potential of individuals to engage in the AJCU high impact practices offered at Jesuit institutions. For example, 71% of pre-college Catholics participated in retreats,

while only 45% of pre-college non-Catholics participated in retreats. Similarly, 31% of pre-college Catholics participated in the Examen, while only16% of pre-college non-Catholics participated in the Examen. Statistically speaking, this makes sense as pre-college religiosity and being Catholic pre-college have a statistically significant positive correlation, $r(477) = .36$, $p<.001$, in a two-tailed test.

Overall, Jesuit institutions have a long history of engaging Catholics in faith formation. The success of this formative work likely relates to who is admitted and their engagement in a specific set of experiences. Though these practices have been developed to strengthen Catholics' faith, it is not only Catholics that have the potential to benefit from these practices, however. One example of this from this study found exists in the group of respondents who were non-Catholic before college and are currently Catholic. This group had the largest statistically significant mean increase from pre-college to current (Table 4.2). These individuals experienced something, potentially in their Jesuit education, that significantly impacted their strength of religious faith. In relationship to their experience in Jesuit higher education, 83% of these individuals participated in three or more of the seven noted AJCU high impact practices and 58% participated in five or more of these practices. These respondents provide evidence that non-Catholics are potentially benefited by these formative practices in Jesuit colleges and universities, and possibly benefit even more than Catholics as evidenced by their large mean religiosity increase.

Yet, even with the potential impact some groups of non-Catholics individuals experienced, the data here indicated that individuals who are Catholic pre-college tend to engage in AJCU high impact practices at a higher rate than other individuals, and these experiences contribute to stronger faith development and engagement. Knowing the individual's pre-college religious practice and their religiosity would offer institutions the greatest opportunity to select those

individuals with the greatest likelihood of strengthening their religious faith through the experience of Jesuit higher education. In the absence of this information, continuing to request applicants' self-reported religion offers the opportunity to identify a group of students likely to engage in these practices. Maintaining a critical mass of students who are predisposed to engaging and open to being impacted by these experiences that reside at the heart of these institutions is essential to the future of these institutions. Without students participating in them, the AJCU high impact practices will not continue at these institutions, especially as many confront increasing financial constraints. This is critical as these practices are essential to their formative mission.

AJCU High Impact Practices & The Examen of Conscience

While this research has found having multiple AJCU high impact practices available for students important, regression analysis also showed that not all AJCU high impact practices have equivalent effect on the increase in strength of religious faith (religiosity) among alumni. For this reason, I shift the analysis to review further the specific AJCU high impact practice, the Ignatian Examen of Conscience (Examen).

Regression analysis found engagement of individuals in the Examen to have a statistically significant positive relationship with current religiosity. This relationship supports and encourages broader engagement of students with the Examen in Jesuit institutions. However, in reviewing the data from this study on individuals' participation in the specific AJCU high impact practices, I found that no individual participated in the Examen without also participating in other AJCU high impact practices. Some individuals participated in zero AJCU high impact practices (32) and some participated in one AJCU high impact practice (35), but no one participated in Examen as their single AJCU high impact practice. Additionally, only one individual participated in only two AJCU high impact practices with one of the practices being the Examen. Results suggest that

individuals did not engage in the Examen as an isolated practice. Rather, the more likely possibility is that the Examen plays an important role in concert with other AJCU high impact practices. This practice is likely being incorporated into retreats, CLC small faith sharing groups, spiritual direction, service, and even liturgy, if not in all of them. This implies that there may potentially be a "suite" of AJCU high impact practices that could lend themselves to the greatest potential impact on individuals' religiosity

Regression analysis illustrated that participation in more AJCU high impact practices, in general, had a positive impact on current religiosity and that the Examen, specifically, had a positive impact on current religiosity. Descriptive analysis and means comparison, subsequent to this analysis, suggests that Jesuit colleges and universities could benefit from identifying a method for developing a "suite" of AJCU high impact practices for individual students based on individual background and context and current context. Each of these "suites" of experiences would likely benefit from the inclusion of the Ignatian Examen of Conscience, but not in isolation, at least not without investigating the effects of the Examen as a stand-alone practice.

Encouraging the Examen further on Jesuit campuses should be supported, but it should be combined with other AJCU high impact practices as well. While the Examen has been found in this research to have an impact on adult religiosity, it is also core to the identity of Jesuit institutions. A practice from Ignatius' *Spiritual Exercises* (1548), the Examen is required of all Jesuits twice a day. It is possible that Kevin O'Brien was speaking directly of the Examen when he wrote that the *Spiritual Exercises* should "animate the work of the university… They teach habits of reflection that help students and others integrate experience, understanding, and moral decision-making, whether in classrooms, laboratories, residence halls, athletic fields, or community service sites." (2015, p. 3). A focus on the Examen will support faith formation, while

potentially supporting liberal arts educational goals that Jesuit education has held as central since it began.

Engagement in the Examen has supported Jesuits' prayer life and relationship with God since the founding of the order. Along with Mass and the Divine Office, the Examen is a practice that Ignatius required Jesuits be engaged in daily. Notably, Jesuits have never solely engaged in the Examen, but have included it as a component of daily prayer and reflection and in the Spiritual Exercises. Now, the Examen is being shared with students in Jesuit institutions of higher education and it is potentially supporting the growth in strength of faith among alumni of Jesuit institutions of higher education, but it is doing so as a part of a "suite" of experiences.

The statistical significance of the Examen and total participation in the AJCU high impact practices, in predicting current religiosity among this group of Jesuit alumni, is evident. However, it is now essential to identify the appropriate mix of AJCU high impact practices that result in the largest positive impact on religiosity.

Liberal Arts Education and Religiosity

The liberal arts form the core a Jesuit education. One of the reasons that Wheeling Jesuit has transitioned from being Jesuit and Catholic to being only Catholic is because of an institutional move to a professional education curriculum that does not include the liberal arts. In making this choice the institution chose to no longer be Jesuit. This research found that neither total participation in the American Association of Colleges & Universities (AAC&U) High Impact Practices nor participation in any individual AAC&U high impact practices had a statistically significant relationship to respondents' current religiosity. Research has not previously analyzed or sought to identify a relationship between the AAC&U high impact

practices and strength of faith or spirituality among college alumni; however, for Jesuit and other Catholic universities this is an important question.

The lack of a statistically significant relationship between the AAC&U practices and current religiosity, however, was surprising and warrants additional research. It is possible that the AAC&U high impact practices are not the appropriate high impact practices for looking at the faith formator role of Jesuit education. Certainly, this study acknowledges that Jesuit education has unique and specific practices, that I defined as the AJCU high impact practices and that are tied to the faith formation aspect of the identity of these institutions. Further research should investigate the role of liberal education in Jesuit institutions to elaborate more clearly how the goals of liberal education relate to the core of Jesuit education and to examine how the AAC&U high impact practices might be better utilized by Jesuit institutions to assess how Jesuit liberal education is achieving the desired impacts on its graduates.

Recruitment and Engagement of Non-White Students

The vast majority of respondents in the research were white; however, analysis found that being Asian/Asian-American or Latino had a positive and statistically significant relationship with current religiosity. Cumulatively, Latino and Asian/Asian-American respondents accounted for 85 of the 483 respondents. Of these, the majority were female. Again, if a growth in strength of religious faith is a goal of Jesuit education then my research would indicate a benefit to institutions to consider their efforts in recruiting these groups of students. Additionally, for the goal of faith formation, these groups should be targeted for engagement in AJCU high impact practices.

Assessment of Institutions

This research builds upon the perspectives offered by Buckley (1998), Kolvenbach (2000), Brackely (2005), Garanzini (2007), Kolvenbach (2000), Nicolas (2010), and and Currie (2010). Each of these Jesuits shares the perspective that is further articulated by the AJCU presidents (2012): the purpose of Jesuit higher education is one of formation. This formation speaks to the intellect, certainly, but even more deeply it speaks to the growth of people of engaged and active faith. Evaluating these universities with metrics that do not look to the achievement of this goal falls short.

There is a place for looking at what is happening at these institutions; however, the varying forms of "Catholic checklists" advocated by Janosik (1999), Sullins (2004), Boylan (2015), Collins (2013), Gallin (2000), Garrett (2013), Heft (2012), Killen (2015), Peck & Stick (2008), and Whitney (2005), do not meet the deeper needs of coming to authentically knowing to what degree and how these institutions impact the faith formation of their students. Morey and Piderit's 2006 study of Catholic institutions called out a crisis among U.S. Catholic colleges and universities. The core to this crisis is that institutions are not living the mission to impact the lives of young people, but instead are falling into a transactional relationship with students.

This research stands in contrast to Morey and Piderit's (2006) findings and offers a counter argument to this perspective. In an age of increasingly critical perspectives on higher education and skepticism about the Catholic church as an institution, U.S. Jesuit higher education is potentially impacting the formation of people of faith. Although this study cannot make causal claims about to what degree undergraduate experiences in Jesuit institutions are responsible for post-graduate religiosity, it has found a statistically significant relationship between experiences

in Jesuit higher education and religiosity—evidence that these institutions are impacting faith formation.

Religiosity

The Santa Clara Strength of Religious Faith Questionnaire, utilized in this study to survey religiosity, was grounded in researchers' belief that religiosity, or strength and engagement in religious faith, was more than just attendance at religious services (Allport & Ross, 1967; Allport, 1966a, 1966b; Batson & Schoenrade, 1991; Cohen et al., 2005; Hill & Hood, 1999). The ability of this metric to gather more data on this more nuanced perspective of religious faith offers a more holistic picture of individuals' faith lives than just attendance at religious services. In this research, this more robust ability to analyze religiosity is realized. With this realization has come an interesting question: What does it mean if faith is growing in all other measurable areas, but religious service attendance is decreasing?

Attendance at religious services as part of a community and sharing of the Eucharist in the context of the Mass are essential elements of the Catholic tradition. However, the predominantly self-identified Catholic, fairly religious group of respondents in this study seem to reflect a larger social trend toward lower levels of attendance at religious services. This decrease in Mass attendance is occurring among participants who report enjoying being around others who share their faith, find their relationships with God extremely important, and look to their faith as a source of comfort. This decrease in service attendance has occurred while the noted areas and all other measured aspects of religiosity have increased. Additionally, this decrease in worship service attendance occurred despite 84.3% of respondents noting that they participated in liturgy while an undergraduate.

The current data set does not offer reasons for the decrease in attendance in worship services. However, that this decrease is happening despite an overall increase in religiosity is something that should be studied within Jesuit higher education, as Jesuit institutions seek to increase strength and engagement in religious faith. As Catholic apostolate, Jesuit higher education has a responsibility to promulgate the faith. At the very least, this should mean identifying strategies to maintain the levels of attendance at worship services from pre-college into adult life. Given the potential of a large Catholic population that, though not engaging in the regular attendance at Mass, has strong religious faith, it seems that a more robust strategy that engages and includes these individuals in the Catholic Church outside of liturgy could be highly successful. Eighty-one percent of these individuals enjoy being around others who share their faith, but less than 57% consider themselves active in their church.

One potential reason for this lack of activity in the church, exists in the dozens of sexual abuse cases that began in 2002 and continue to the present. Though the impact of these scandals is not easy to ascertain, this study did include in its online, self-administered survey a question that asked individuals if there were "Any other experiences recently that you believe impacted your strength of religious faith or engagement." Of the 483 respondents, 215 offered a response to this prompt in the free response section and 20 of those responses spoke directly or alluded to the sexual abuse crisis as having directly impacted their religious faith.

Given the challenge of individuals' decrease in activity in the church, their overall high levels of religiosity, and the fact that 89% of respondents believe that their alma mater impacted their faith lives, U.S. Jesuit higher education has an amazing opportunity before it. The opportunity to bridge the gap between institutional church and these non-church-going individuals of strong religious faith stands before these Jesuit institutions.

Identifying the best methods of facilitating this relationship between the church and individuals of strong religious faith should come through research. However, in the absence of this research presently, Jesuit institutions might be able to serve the future of the Catholic Church by beginning to reach out to alumni immediately. This outreach could be in the form of streamed liturgies. Potentially even greater impact might come from reaching out pastorally to people without a home parish to call upon who are struggling spiritually, socially, or emotionally. This pastoral outreach could take the form of pastoral care calls and emails facilitated from Jesuits and other campus ministers at the U.S. Jesuit colleges and universities. There could be offers of spiritual direction, facilitated faith sharing groups, virtual theology on tap, or a regularly scheduled online Examen. Once individuals are reengaged with these opportunities, they should also be presented with tools for identifying their local resources as well. Directly connecting them with parishes that can fulfill their hunger for a communal relationship with the divine or giving them the tools they need to seek and find a fulfilling parish on their own will support this group of individuals in crossing this bridge into stronger relationships with the institutional church. Individuals in this research have shown that they desire a relationship with God and feel a connection to their undergraduate institutions. Jesuit colleges and universities should seize the opportunity to leverage these relationships to serve individuals and the institutional church.

Limitations

This research and any conclusions are limited to the 483 respondents. This research is not generalizable to the large population of 2000 to 2010 graduates of Jesuit higher education because it was not gathered through a random sample or census method. In an ideal research setting, with many more resources, I would have had a random sample of alumni from the target population and a comparison group of randomly selected individuals accepted to Jesuit institutions, but who

went to non-Jesuit institutions; this research does not have this feature. This research is also limited by the inability to calculate an actual response rate, though there is no definitive evidence of a significant non-response bias.

An additional limitation of this study is in the demographics of the larger alumni population and of the respondents themselves. The records regarding the demographics of the alumni of these institutions are limited by how universities gather, maintain, and make data available. While demographics of current students and admitted students are readily available, alumni data are not maintained consistently and regularly. This is the result of many challenges: maintaining accurate contact information and getting alumni to respond to communication. Based on AJCU data, this study included more white, Catholic, females than the population of interest.

Other limitations address who responded to the online survey and how they responded. As individuals self-selected to respond after reading that the focus of the study was on religiosity, individuals who were interested in the topic of religion or were more religious might have been particularly likely to reply. That there were respondents who are atheist, agnostic, or noted no particular religion weakens this hypothesis, however. Self-selection of these individuals into the study, however, may speak to a larger desire to engage in a conversation on religiosity for positive or contrarian reasons. Other respondents' rationales for participating in the study may include the incentive offered for participation or their positive feelings about their undergraduate alma mater. No matter the reason for participation, there is potential response bias in the sample of contacted alumni who chose to complete the online survey.

Retrospective self-reporting challenges respondents for a variety of reasons: it requires respondents to correctly recall something they did or believed at an earlier time, there is potential

for misunderstanding the time frame in consideration[2], or there is temporal self-appraisal in which individuals adjust views of their past self-based on their current self-appraisal (Wilson & Ross, 2001, 2003). Recent study of temporal self-appraisal theory in relationship to recollection of past religiosity is not conclusive (Hayward et al., 2011).

A final limitation of this study is that it did not account for specific data gathering about the impact of the sexual abuse crisis on current adult religiosity. The crisis has been evolving throughout the development and design of this research study and data gathering. Unfortunately, there is not definitive scholarly research on the potential impact of this crisis on religiosity.

Despite these limitations, this study offers a unique contribution to research on the potential impacts of Jesuit higher education on those who have chosen to engage in it and a quantitative step forward from anecdotal accounts. It establishes an initial model for research on one of the clearest purposes of Jesuit education, the formation of people of faith, and provides initial findings from a sample of 483 individuals from the target population at a time when assessment and accountability of higher education has never been more prominent.

Additional Research

In establishing a significant relationship between participation in Jesuit high impact practices and alumni religiosity, this study supports replication of this study on a larger basis. Ideally, through sharing the data from this study with individual Jesuit institutions, I will be able to garner additional support to advance this research. Whereas communication with individual alumni associations was challenging, official sponsoring of such research by individual institutions would potentially access a larger sample. If all Jesuit institutions of higher education

[2] In this study, there exists a possibility that not all respondents viewed the time frame in refence when asking about before college as the same; for example, some may have considered this as when they were 16-18 years old, while others may have been reflecting on their faith beliefs and practices when they 10 to 12 years old.

prioritized this research, such collaboration would provide access to and engage larger numbers of alumni more robustly.

Through this research process AJCU has offered tremendous support. One thought that their President has shared is a desire to see this research expanded to the larger body of Catholic institutions of higher education in the U.S. He has encouraged that I expand this study, through the engagement of the Association of Catholic Colleges and Universities (ACC&U) and their approximately 220 institutions. Expansion of this study to all ACCU members would be an exciting opportunity to look at the impact of all U.S. Catholic higher education on students' religiosity and also open the door for potential comparison between different models of Catholic higher education (sponsored by different orders, independent, or diocesan).

Research supports additional study of the role of liberal arts education in developing religiosity. The liberal arts have always served as a core piece of their Jesuit identity. Currently, this most often means institutions have a core based in liberal arts for all majors including education, nursing, and business. This study found no statistically significant relationship between participation in the individual AAC&U high impact practices or total AAC&U high impact practices and religiosity. Investigating the philosophical role of liberal education in Jesuit higher education and the specific relationship between liberal arts education and alumni religiosity could yield critical information about Jesuit education.

The research in this study is not definitive, but rather opens the door for future research. It is my great hope that this research can be expanded over time and serve to support the future of U.S. Jesuit higher education. On its face, this research already offers much for U.S. Jesuit institutions to consider; additional research will only expand the potential to achieve the goal of graduating individuals committed to active lives of religious faith.

Conclusion

This study offers a foundation and justification for future research on the relationship between Jesuit higher education and adult religiosity. Expansion and replication of this research can impact future of Jesuit Catholic and the larger community of Catholic higher education. Jesuit Catholic education is unique in the larger landscape of higher education in the United States, and increased evidence of the positive, multiple impacts of these institutions on their students, beyond their time in attendance, will support an assured future for these institutions.

Appendix A
Jesuit Higher Education Alumni Religiosity Survey Instrument

In what year were you born?

▼ 1997 (53) ... 1950 (51)

What is your sex?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)

Please select the following choices to best describe your race. (Mark all that apply)

- ☐ White (1)
- ☐ Black/African American (2)
- ☐ Hispanic or Latino/Latina (6)
- ☐ Asian/Asian American (3)
- ☐ Native Hawaiian or Other Pacific Islander (4)
- ☐ American Indian or Alaska Native (5)

Are you currently...?

- ○ Married (1)
- ○ Living with a partner (6)
- ○ Divorced (3)
- ○ Separated (4)
- ○ Widowed (2)
- ○ Never married (5)
- ○ Unknown (7)

How many children do you have?

▼ 0 (1) ... 13+ (14)

How would you assess your present financial status?

- ○ Well off (1)
- ○ About average (2)
- ○ Poor (3)
- ○ Varied (4)

Which of the following levels of education have you completed? (Select all that apply)

- ☐ Bachelor's Degree (1)
- ☐ Master's Degree (2)
- ☐ Doctoral Degree – research/scholarship (for example, PhD, EdD, etc.) (3)
- ☐ Doctoral Degree – professional practice (including: chiropractic, dentistry, law, medicine, optometry, pharmacy, podiatry, or veterinary medicine) (4)
- ☐ Doctoral Degree – other (5)

What is the highest level of education completed by your mother or maternal guardian?

▼ Did not attend school (1) ... NA (23)

What is the highest level of education completed by your father or paternal guardian?

▼ Did not attend school (1) ... NA (23)

How much did your mother or father encourage your faith life BEFORE COLLEGE?

- ○ A great deal (1)
- ○ Somewhat (2)
- ○ Slightly (3)
- ○ Not at all (4)

RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION

Which Jesuit institution did you attend as an undergraduate college student?

▼ Boston College (1) ... Xavier University (28)

Did you complete your undergraduate degree at ${JesuitSchool/ChoiceGroup/SelectedChoices}?

- Yes (1)
- No (2)

What year did you complete your undergraduate studies at ${JesuitSchool/ChoiceGroup/SelectedChoices}?

▼ 2010 (1) ... 2000 (42)

Number of years you attended ${JesuitSchool/ChoiceGroup/SelectedChoices} as an undergraduate student?

▼ 1 (1) ... 7 or more (7)

RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION

What was your major area of studies while at ${JesuitSchool/ChoiceGroup/SelectedChoices}?

- Humanities (E.g. English literature, modern languages, history, philosophy, theology, etc.) (1)
- Social Sciences (E.g. anthropology, geography, political science, sociology, psychology, communications, etc.) (2)
- Creative Arts (E.g. fine art, theatre, creative writing, etc.) (3)
- Sciences (E.g. astronomy, biology, chemistry, physics, etc.) (4)
- Business (E.g. accounting, marketing, management, etc.) (5)
- Engineering (E.g. mechanical, electrical, aerospace, etc.) (6)
- Nursing (7)
- Other (8) _____

How many hours on average per week of on- and off- campus work for pay did you do while attending ${JesuitSchool/ChoiceGroup/SelectedChoices}?

▼ 0 (2) ... 61+ (1)

Please select "Yes" or "No" for each activity noted below.

Did you participate in any of the following as a part of your ${JesuitSchool/ChoiceGroup/SelectedChoices} education?

Internship, co-op, field experience, student teaching, or clinical assignment

- Yes (1)
- No (2)

Undergraduate research supervised or supported by a faculty member

- ○ Yes (1)
- ○ No (2)

Diversity or global learning (Ex. courses or programs that encouraged your exploration of cultures, life-experiences, or worldviews different than your own; these may have included study abroad or other immersive experiences)

- ○ Yes (1)
- ○ No (2)

Community-based project or service learning as part of an academic course

- ○ Yes (1)
- ○ No (2)

Culminating experience, (Ex. a "senior capstone" course, senior project or thesis, or comprehensive exam)

- Yes (1)
- No (2)

Faith sharing group (Ex. Christian Life Community)

- Yes (1)
- No (2)

First-year seminar and/or first-year experiences that intentionally placed you in a small group of peers for inquiry, writing, or collaborative learning

- Yes (1)
- No (2)

On campus liturgical services (Ex. Prayer services, Masses, worship services, etc.)

- Yes (1)
- No (2)

Common intellectual experiences (Ex. common core set of courses)

- Yes (1)
- No (2)

Learning Community (Ex. two or more linked courses that examine questions that have an impact beyond the classroom)

- ○ Yes (1)
- ○ No (2)

Writing-intensive courses (At least one 20+ page paper assigned in the course)

- ○ Yes (1)
- ○ No (2)

Spiritual Direction (facilitated by a priest, nun, or lay person)

- ○ Yes (1)
- ○ No (3)

A faith-based retreat of any kind

- Yes (1)
- No (3)

The Spiritual Exercises (Either in annotated, abbreviated, retreat, or busy person's)

- Yes (1)
- No (2)

Daily Examen (I.e. Examen of Conscience or Ignatian Examen)

- Yes (1)
- No (3)

Q446 Dialogue related to faith and justice in an academic course

- Yes (1)
- No (3)

While you were an undergraduate at ${JesuitSchool/ChoiceGroup/SelectedChoices}, how many individuals associated with your institution, other than fellow students, took a special interest in you or

your work--that is, how many individuals could you turn to for advice or for general support or encouragement?

- ○ 10+ (1)
- ○ 7-9 (2)
- ○ 4-6 (3)
- ○ 1-3 (4)
- ○ 0 (5)

Who was that? (Select all that apply)

- ☐ Faculty member (1)
- ☐ Teaching assistant (2)
- ☐ Resident advisor (3)
- ☐ College dean or other administrator (4)
- ☐ Athletic coach (5)
- ☐ Alumnus/a (6)
- ☐ Campus minister (7)
- ☐ Jesuit (8)
- ☐ Other vowed religious (9)
- ☐ Other (10) _____

Overall, how satisfied have you been with the ${JesuitSchool/ChoiceGroup/SelectedChoices} experience you had?

- ○ Very satisfied (1)
- ○ Somewhat satisfied (2)
- ○ Neither satisfied nor dissatisfied (3)
- ○ Somewhat dissatisfied (4)
- ○ Very dissatisfied (5)

RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION

Please answer the following questions about your CURRENT religious faith.

What is your present religion?

- ○ Protestant (1)
- ○ Roman Catholic (2)
- ○ Mormon (3)
- ○ Orthodox (Such as Greek or Russian Orthodox) (4)
- ○ Jewish (5)
- ○ Muslim (6)
- ○ Buddhist (7)
- ○ Hindu (8)
- ○ atheist (do not believe in God) (9)
- ○ agnostic (not sure if there is a God) (10)
- ○ something else (11) _____
- ○ nothing in particular (12)

Do you think of yourself as a Christian?

- ○ Yes (1)
- ○ No (2)

How often do you go to a designated place of praise and worship (e.g. church, temple, or synagogue)?

- ○ Never (1)
- ○ Only on Holidays and special occasions (2)
- ○ A few times a month (3)
- ○ Once a week (4)
- ○ More than once a week (5)

How often do you pray (talk to God)?

- ○ Rarely or never (1)
- ○ A few times a month (2)
- ○ Once a week (3)
- ○ Two or more times a week (4)
- ○ Daily (5)
- ○ More than once a day (6)

Please answer the following questions about your CURRENT religious faith. Use the scale below each question to indicate the level of agreement (or disagreement) for each statement.

My religious faith is extremely important to me.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I pray daily.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I look to my faith as a source of inspiration.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I look to my faith as providing meaning and purpose in my life.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I consider myself active in my faith or church.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

My faith is an important part of who I am as a person.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

My relationship with God is extremely important to me.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I enjoy being around others who share my faith.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I look to my faith as a source of comfort.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

My faith impacts many of my decisions.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

The next several questions ask about your life BEFORE college. Specifically, during your high school years (i.e. 14-18 years of age).

How would you assess your family's financial status BEFORE college?

- ○ Well off (1)
- ○ About average (2)
- ○ Poor (3)
- ○ Varied (4)

Please select the type of school you attended for most of your high school years:

- ○ Public (1)
- ○ Charter (3)
- ○ Jesuit (7)
- ○ Catholic (non-Jesuit) (2)
- ○ Religiously Affiliated Non-Catholic (4)
- ○ Private Non-Religious (5)
- ○ Home schooled (6)

BEFORE college, did you engage in the same religious/spiritual tradition that you currently practice?

- ○ Yes (1)
- ○ No (2)
- ○ Unsure (3)

RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION

BEFORE college, what religion did you practice?

- ○ Protestant (1)
- ○ Roman Catholic (2)
- ○ Mormon (3)
- ○ Orthodox (Such as Greek or Russian Orthodox) (4)
- ○ Jewish (5)
- ○ Muslim (6)
- ○ Buddhist (7)
- ○ Hindu (8)
- ○ atheist (do not believe in God) (9)
- ○ agnostic (not sure if their is a God) (10)
- ○ something else (11) _____
- ○ nothing in particular (12)

Did you think of yourself as a Christian?

- ○ Yes (1)
- ○ No (2)

RELIGIOSITY IN MIDDLE ADULTHOOD AMONG ALUMNI OF U.S. JESUIT HIGHER EDUCATION

BEFORE college, how often did you go to a designated place of praise and worship (e.g. church, temple, or synagogue)?

- ○ Never (1)
- ○ Only on Holidays and special occasions (2)
- ○ A few times a month (3)
- ○ Once a week (4)
- ○ More than once a week (5)

BEFORE college, how often did you pray (talk to God)?

- ○ Rarely or never (1)
- ○ A few times a month (2)
- ○ Once a week (3)
- ○ Two or more times a week (4)
- ○ Daily (5)
- ○ More than once a day (6)

Please answer the following questions about your religious faith BEFORE you went to college. Use the scale below each question indicate the level of agreement (or disagreement) for each statement.

My religious faith was extremely important to me BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I prayed daily BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I look to my faith as a source of inspiration BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I looked to my faith to provide meaning and purpose in my life BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I considered myself active in my faith or church BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

My faith was an important part of who I was as a person BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

My relationship with God was extremely important to me BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I enjoyed being around others who shared my faith BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

I looked to my faith as a source of comfort BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

My faith impacted many of my decisions BEFORE going to college.

- ○ Strongly Agree (1)
- ○ Agree (2)
- ○ Disagree (3)
- ○ Strongly Disagree (4)

How much do you think your experience at ${JesuitSchool/ChoiceGroup/SelectedChoices} impacted your current faith life?

- ○ A great deal (1)
- ○ Somewhat (2)
- ○ Slightly (3)
- ○ Not at all (4)

Are there any other experiences that you had at ${JesuitSchool/ChoiceGroup/SelectedChoices} that you believe might be important to share?

_____

_____

_____

_____

_____

Have you had any recent experiences that you believe have impacted your current strength of religious faith or engagement in that faith?

_____

_____

_____

_____

_____

End of Block: Closing Questions

Start of Block: UCCE Participation

Did you participate in a UCCE (University Consortium for Catholic Education) program (Ex. ACE, PLACE, UCTC, etc.)?

- ○ Yes (1)
- ○ No (3)

Which UCCE program did you participate in?

▼ ACE, University of Notre Dame (18) ... Other (33)

Appendix B
Predictors of Adult Religiosity with Multicollinearity Statistics

Predictors of Adult Religiosity Multicollinearity Statistics Table

	Model A		Model B	
Variable	Tol	VIF	Tol	VIF
Constant				
Birth Year	0.35	2.85		
Sex	0.72	1.38		
White	0.29	3.51		
Black/African Am.	0.62	1.61		
Latino(a)	0.52	1.91		
Asian/Asian Am.	0.38	2.62		
Native Hawaiian/Pacific Islander	0.80	1.25		
American Indian/Alaska Native	0.86	1.16		
Mom and Dad Average Ed.	0.69	1.45		
Catholic (Non-Jesuit) High Sch.	0.72	1.39		
Jesuit High Sch.	0.68	1.46		
Religiously Affiliated (Non-Cath.)	0.91	1.09		
Private (Non-Relig.)	0.86	1.17		
Parent Encourage Faith Life	0.65	1.54		
Family Financial Pre-College	0.70	1.44		
Pre-College Religiosity	0.58	1.71		
Hours Worked	0.76	1.33		
Social Sciences	0.69	1.46		
Creative Arts	0.87	1.15		
Sciences	0.81	1.24		
Business	0.70	1.43		
Engineering	0.88	1.14		
Nursing	0.90	1.11		
Other Acad. Area	0.75	1.33		
Grad. Year	0.33	3.02		
AAC&U HIP				
Internship			0.75	1.34
Research			0.78	1.28
Global			0.81	1.24
Service Learning			0.75	1.33
Capstone			0.74	1.35
First-Year Exp.			0.79	1.27
Common			0.80	1.26
Learning Com.			0.81	1.24
Writing			0.75	1.42
Total AAC&U Partic.	0.77	1.30		
AJCU HIP				
Retreat			0.51	1.97
Spiritual Ex.			0.53	1.88
Examen			0.56	1.78
Faith/Justice			0.68	1.48
CLC			0.54	1.86
Liturgy			0.54	1.86
Spiritual Dir.			0.56	1.78
Total AJCU Partic.	0.63	1.58		

Appendix C
Respondent Graduation Year Cross Tabulated with Major

(n=451)

Major	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Arts & Sciences (A&S)												
Humanities	2.2%	4.9%	1.3%	1.5%	3.3%	1.8%	2.9%	4.0%	3.1%	4.4%	3.5%	33.0%
Social Sciences	3.3%	6.7%	1.3%	1.3%	2.0%	2.9%	2.2%	2.7%	1.3%	2.0%	1.5%	27.3%
Sciences	1.3%	0.4%	0.2%	0.7%	0.9%	0%	1.1%	0.7%	0.9%	0.4%	1.1%	7.8%
Creative Arts	0.2%	0.7%	0.2%	0.4%	0.2%	0.2%	0.2%	0%	0%	0%	0.7%	2.9%
Total A&S	7%	12.7%	3%	3.9%	6.4%	4.9%	6.4%	7.4%	5.3%	6.8%	6.8%	71%
Non-A&S												
Business	1.5%	2.2%	1.1%	0.9%	1.5%	2.4%	0.9%	1.3%	0.9%	0.4%	0.9%	14.2%
Engineering	0.2%	0.4%	0.2%	0.2%	0.2%	0.2%	0%	0.2%	0%	0.2%	0.2%	2.2%
Nursing	0.2%	0%	0%	0%	0%	0%	0.2%	0%	0.4%	0.4%	0%	1.3%
Other	1.3%	1.1%	1.5%	0.7%	0.9%	1.1%	1.1%	1.1%	0.4%	0.7%	1.3%	11.3%
Total Non-A&S	3.2%	3.7%	2.8%	1.8%	2.6%	3.7%	2.2%	2.6%	1.7%	1.7%	2.4%	29%

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