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# BRIDGING BIBLE AND BIOLOGY: THE IMPACT OF FAITH INTEGRATION ON THE SPIRITUAL GROWTH OF STUDENTS IN CHRISTIAN HIGHER EDUCATION

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## ABSTRACT

*The integration of faith and learning (IFL) is an integral part of Christian higher education. The recent years have seen a spate in published studies testifying to an intense pursuit of meaningful IFL by many institutions of Christian higher education. However, little scholarship has been devoted to explore the influence of faith integration in science and its effect on the spiritual growth of students. A private, Christian university in the Southwest United States, has integrated the Christian worldview (CWV) in at least 30% of courses in college programs. Instilling the core Christian convictions into each student's total college life has been one of the distinctive tasks of the University. The purpose of this study is twofold: (1) to understand how CWV develops in Biology and (2) how IFL affects the personal faith of students. The data was collected, over a period of three consecutive years 2016 to 2018, from students preparing for Health Care and Science careers. Using the survey design with open-ended questions, 489 participants provided responses to articulate the Christian worldview perspective of microorganisms and diseases. Findings reveal a positive impact of IFL on the personal faith of students. The results also indicate students demonstrating growth in their understanding of the biblical worldview within the context of Biology.*

## INTRODUCTION

Christian Higher Education in the Twenty first century stands at a crossroad. Many institutes of learning have rejected their historical roots of religion in an attempt to accept all and not offend anyone by relegating religion to the realm of personal matter, not a public practice. (Monsma, 1996). And to make matters worse, an overwhelming trend shows students abandoning the faith in College (Uecker, 2007; Smithwick, 2008; Stonestreet and Edwards, 2010; Kinnaman, 2011). According to Barna's latest research, the percentage of Gen Z that identifies as atheist doubles that of the U.S. adult population (Barna, 2018). There are various reasons for students to reject their faith but for many, science played a key role (West, 2014; Lipka, 2016). The tendencies

toward religious neutrality in schools would seem that students more than ever need religion for a well-rounded education. Research suggests that professors play an influential role in the faith formation of students (Hauptman, 2013; Bowman, 2015; Kaul, Hardin, & Beaujean, 2017).

Integration of Faith and learning (IFL) is foundational to Christian higher education. A private, Christian university in the Southwest United States with clear Christian identity is intentionally committed to IFL. The university's basic strategy of faith integration centers on the Christian worldview (CWV) incorporated into at least 30% of courses in college programs since 2015. This means, 3 out of every 10 courses within each major offered in the program should introduce, reinforce, or benchmark identifiable CWV principles and/

or competencies into the curriculum. While IFL is intentional at the university level, it is critical to examine how it affects spiritual growth and learning. Therefore, this study investigates the impact of IFL on the personal faith of students pursuing Science majors.

The purpose of this qualitative descriptive study is to understand (1) how CWV develops in Biology, and (2) how IFL affects the personal faith of students. Students in microbiology courses from 2016 to 2018 at a private, Christian university in the Southwest United States participated in the data collection. This study is important as research is void of any report on the impact of faith and learning integration in science disciplines. The outcome of the findings will be useful in developing different IFL strategies in the science curriculum and classroom content.

### RESEARCH QUESTION (RQ)

Several studies reported the intense pursuit of meaningful IFL in Christian higher education (Mahoney, Schmalzbauer & Younis, 2001; Jacobsen and Jacobsen, 2013; Konkol, 2017). However, not much scholarship has been devoted to explore the influence of religion on the spiritual growth of students in science. The current study is an attempt to fill this gap by seeking to answer this question.

*RQ: What is the impact of IFL on the personal faith of students in the science class?*

The research question provides the parameters of the study for integration of faith and learning in a higher education. First, the research question presents the theoretical framework of the study, mainly the integration of faith and learning theory. Second, the research question addresses the implementation of integration of faith and learning in science classes. Lastly, the research question explores the impact of integration of faith and learning on faith formation of students studying science in higher education.

The remaining sections of this paper includes 1) a literature review of the history of higher education, secularization of scholarship, science and scripture, faith formation as an important outcome of IFL, 2) Method used for data collection and IFL implementation in the primary author's classroom 3) Data Analysis 4) Results to report the findings 5) Discussion of the results and 6) Conclusion.

## REVIEW OF LITERATURE

### *History of Higher Education*

American Higher Education initiated as seminaries to train a Christian clergy (Thelin, 2011). Starting in the 19th and early 20th centuries, religion and ethnicity often overlapped with Presbyterian colleges serving Scotch-Irish immigrants, Lutheran campuses primarily served children from German and Scandinavian families, Catholic colleges for Irish, Italian, and Slavic students along with Methodists and Baptists building their academic and denominational sanctuaries (Thelin, 2007). Higher education reached its zenith in America, building on the Reformation and Post-Reformation period emphasis of education within the context of a Christian worldview (Dockery, 2000).

### *Secularization of Scholarship*

Until the late nineteenth century, religion was an integral part of American higher education. However, the last several decades have seen a subtle shift from religion to secular education as institutions started distancing themselves from their initial Christian mission. Influenced by Freud, and Darwin, the academy underwent a so-called progressive "liberation of scholarship from the shackles of religious tradition" (Schmalzbauer & Mahoney, 2008). The separation of state and religion saw exclusion of religion in conversations to avoid offending others (Mayhew, Bowman, & Rockenbach, 2014). Many universities were concerned about alienation from the rest of the higher education community (Marsden, 1997), and science also played a significant role in secularization (Harrison, 2017).

### *Science and Scripture*

The result of secularization is realized only in retrospect. According to one survey, 92% of the members of the National Academy of Sciences (NAS) reject a belief in God or higher power (Stirrat and Cornwell, 2013). Among the NAS scientists, Biologists rated the lowest with only 5.5 % that had belief in God (Larson and Witham, 1998). The unbelief among scientists mainly centers on the subject of human origin. Paz-y-Mino-C and Espinosa (2013) highlight the inherent incompatibility of belief and science that makes it illusive to expect a harmonious relationship between religion and evolution in scientifically advanced societies.

One of the key reasons people fall away from faith is intellectual skepticism. And for many of young people, science seems to influence their decision to leave the faith (West, 2014). According to a recent Barna report, most Christian school parents believe that character and spiritual development are among the ultimate purposes of education. (Barna Group. 2017). The formative years on university campuses today determine the future of students. The college years are an important developmental time when students develop their belief systems. It is essential that students are trained to consider everything with a biblical worldview and be able to discern truth that is not specifically revealed in the Bible. Christian universities must provide a supportive learning environment that fosters critical thinking of scientific theories while enabling students to remain rooted in their foundational Christian faith.

#### *Faith formation an important outcome of IFL*

The integration of faith and learning (IFL) is the most distinguishing feature that sets apart Christian schools from secular universities (Dulaney, Bates, Berg, Forbes, Gunn, Koontz, Mathern, Mullen, Strifler, and Thomas, 2015). The recent years have seen a spate in published studies pertaining to the IFL, testifying to an intense pursuit of meaningful integration of faith and learning by many institutions of Christian higher education (Avery, 2014). The university's foundational documents define IFL as "the scholarly process of joining together knowledge of God and knowledge of the universe for the sake of developing true, comprehensive and satisfactory understandings of humans and the world they inhabit" (Grand Canyon University, 2014). According to Dockery (2000), integration of faith and learning shapes a CWV, instills moral values and helps students grow into better people, employees, and citizens. Simply put in biblical terms, integration of faith and learning is discipleship. The Christian university should strive to incorporate faith in all subjects, aiming to bring students closer to fulfilling God's purpose for their lives. Dockery 2000 said it best: "When integration of faith transforms the student, then faith-learning integration, in its truest form has occurred". It is long lasting and affects the student throughout his or her lifetime and the world in which he or she lives (Mortan, 2004).

## **METHOD**

The research method is a qualitative descriptive study design, which consists of quantitative data for statistical results and qualitative data to help explain or elaborate on the quantitative results (Creswell, 2005). Using the qualitative descriptive study enhances internal validity by collecting data directly from participants using their words about ways to explore a particular phenomenon (Sandelowski, 2000). In this case the phenomenon is the impact of integration of faith and learning on students' personal faith in college science classes. Moreover, qualitative descriptive design allows the findings in published reports to be straightforward with comprehensive descriptive summaries and accurate details of the data collected (Neergaard et al., 2009; Sandelowski, 2000).

#### *Data Collection*

The accessible survey population of participants consisted of males and females ranging in age from 19 years to 22 years that studied microbiology course during 2016 to 2018 at a private, Christian university in the Southwest United States. The sample consisted of 489 students from six semesters in a total of three years. Students provided their responses to end of the semester survey questions that asked, "Did the integration of faith and science strengthen your personal faith in Jesus Christ? Explain your responses with specific examples." From the students' responses, results were extracted to determine 1) whether IFL enhanced students' ability to articulate CWV within the context of microbiology and 2) whether IFL strengthened their personal faith in Jesus Christ. The survey question was developed by the instructor (the primary author). Quantitative data was collected in the form of a dichotomous yes or no response to the question that asked whether the integration of faith and science strengthened their personal faith in Jesus Christ. Descriptive survey data was collected using the open-ended question that asked students to explain their responses with specific examples. The study used purposive sampling of the microbiology classes taught by the instructor from 2016 to 2018. According to Black (2010), researchers often believe they can obtain a representative sample using sound judgment by purposive sampling, which will result in saving time and money.

### *Pedagogical approach*

The university's pedagogical approach for IFL is to incorporate the Christian worldview at both the curricular and instructional levels. This educational strategy enables students to understand Christian beliefs and equips them to engage the world with a sense of vocational calling and purpose. The Christian worldview weaved within science content focused on God as Creator; that fallen humans need to be redeemed and that God is restoring the entire world through his Son, Jesus Christ. These foundational principles provided students a basis on which to build their Christian worldview. Students learned the truth from both scriptural and scientific point of views rather than pitting one view against the other. This approach helped develop the correct Christian worldview of everything, especially for controversial concepts like the topic of origin.

### *Practical examples of the faith integration method used in this study*

Example 1: According to the theory of evolution as described in the text book, the Earth was formed about 4.5 billion years ago. Life on earth originated in water as unicellular cells and slowly evolved into higher life forms to include terrestrial plants, animals, and primates. Humans diverged from primates 5 million years ago. The textbook concludes: "We will never know for sure, of course, how life on Earth began." (Reece, 2017)

The Christian worldview states that God created everything according to its kind in six days. Man was created in the image of God. Here the instructor explained how this truth is accepted by faith which is "conviction of things not seen". Empirical evidence is not required to validate God, because by faith we "believe that he exists and "understand that the entire universe was formed at God's command, that what we now see did not come from anything that can be seen." (Hebrews 11:6, 13)

Considering the natural process of evolution in the light of scriptural principles showed students how the apparent conflict between faith and science is resolved. Students learned to distinguish natural process that involved billions of years from supernatural process that took only six days. This example also showed how Science reveals the natural complexity of life which in itself presents proof of the supernatural God. Thus students not

only grew in their appreciation of science but also expressed wonder and awe of the creator God.

Example 2: An example of IFL in microbiology that also involved controversy was the origin of microorganisms.

According to the Theory of Spontaneous Generation i.e. Abiogenesis:

- Life can arise spontaneously from nonliving matter.
- maggots arise from decaying meat
- after a rain, frogs arise from mud
- flies arise from horse manure

According to biogenesis:

- Life begets Life

Louis Pasteur's swan-necked flask experiment demonstrated that only living microorganisms can give rise to living microorganisms. Pasteur's findings

- refuted the hypothesis that nonliving matter gives rise to living organisms
- once and forever settled the controversy concerning the origin of microorganisms
- Pasteur's results were supported by Rudolf Virchow's : "all cells come from pre-existing cells"

Again, the above textbook explanation of how scientific experiments helped resolve the dispute between Abiogenesis and Biogenesis was used to connect concepts in the Bible. The instructor followed up with the question "Who is the source of Life? After several students responded, the discussion was concluded with this answer: God is the source of all life. According to the Bible, "... Jesus Christ, through whom God made everything and through whom we have been given life. All things were made through him, and without him was not anything made that was made. In him was life..." (1 Corinthians 8:6; John 1:3)

Example 3: This is an example of how the CWV of our Immune system was taught. Students were asked the following discussion questions:

- If God said everything he had made was good, what is the need for an immune system defense?
- Was the immune system created Pre- or Post-fall?

- After students responded, the instructor explained to point out the function of immune system is more than defense. The human immune system
- Helps eliminate worn-out blood cells (about 200 billion per day) and other debris created by apoptosis (Tortora, Funke, and Case 2013, pp. 494–495).
- Is adaptive: it learns, has memory, and is specific.

This lesson was concluded with a well-known verse that most students were able to relate to: “I will praise you, for I am fearfully and wonderfully made; Marvelous are your works, and that my soul knows very well.” (Psalm 139:14)

Example 4: The following discussion questions were used to provide the CWV of microorganisms and disease

- If God is good why did He create bad bugs?
- When did God create microbes or did they evolve later?

The genesis of germs was explained from the biblical perspective.

- God created everything in six days and everything was very good (Genesis 1:31; Exodus 11:20)
- Microbes were originally designed to perform beneficial functions in their designated places—lived in harmony with the rest of creation.
- The Bible tells about the consequence of man’s disobedience— sin and suffering
- Thorns and thistles began to grow on the ground that was cursed (Genesis 3:17).
- Similarly, due to uncontrolled growth microbes started to spread to other places and in order to survive became harmful to cause disease and death.

Example 5: For application of CWV to address ethical dilemmas, a case study for Physician-assisted suicide was used to help students discern what is ethical from the biblical perspective. Students were challenged to consider whether it was ethical to treat or terminate; care or kill.

In this bioethics lesson, the instructor presented the biblical principle “love God and others” and the Bible verse: “...the Lord has told you what is

good, and this is what he requires of you: to do what is right, to love mercy, and to walk humbly with your God” (Micah 6: 8). This was used to show that even when human reasoning (in this case medical ethics) seems right, it takes one to be humble and choose to do what is right and good according to God.

The discipline of Biology encompasses theoretical, ethical, and applied aspects of the study of Life. IFL therefore helped students connect the dots and see how scientific endeavors contributed to faithful stewardship of God’s creation and caused human flourishing.

#### Data Analysis

The students’ responses were imported into MAXQDA qualitative data analysis software. The response to survey question, “Did the integration of faith and science strengthen your personal faith in Jesus Christ? If so, explain it with specific examples” entered three codes. Yes, it strengthened my faith, No or remain same, and Neither. In the code development phase, the three codes of responses were recorded. The responses of the participants are provided in the results section below.

#### RESULTS

In the survey, students provided their responses to end of the semester survey questions asking, “Did the integration of faith and science strengthen your personal faith in Jesus Christ? Explain your responses with specific examples.” From the students’ responses, results were extracted to determine 1) whether IFL enhanced students’ ability to articulate CWV within the context of microbiology and 2) whether IFL strengthened their personal faith in Jesus Christ. Table 1 and figure 1 indicate the impact of IFL on their personal faith.

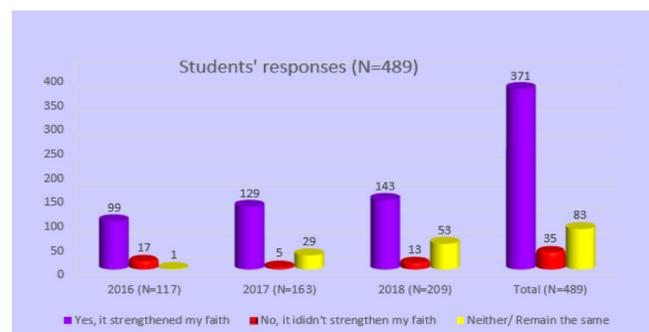


Figure 1. Student responses indicate the impact of IFL on their personal faith

Table 1. Student responses indicate the impact of IFL on their personal faith

Year/ # of students	Yes, It strengthened my faith	No, it didn't strengthen my faith	Neither/ Remain the same
2016 (N=117)	99	17	1
2017 (N=163)	129	5	29
2018 (N=209)	143	13	53
Total (N=489)	371	35	83

From the descriptive survey data to the open-ended question: "Did the integration of faith and science strengthen your personal faith in Jesus Christ? Explain with specific examples," 371 (76%) of the sample population responded "yes" as reflected in the selected student responses below:

*"...as Christians, we should be looking at everything we encounter in this world through a lens that relates to God and His creation."*

*"...saw the biblical perspective of biology topics that I didn't necessarily have one".*

*"...as a mechanical engineer, my profession is completely physics based. Because of this many of the leading scientists in my field are devote atheists and are very out spoken"*

*"I knew I could dedicate myself to a career in science while remaining a devoted Christian."*

*"...has made me more confident and comfortable with my relationship with God"*

Out of 489 respondents, 118 (24%) of the sample population responded "no or remain the same" as reflected in the sample of student responses below:

*"It has not strengthened my personal faith in Jesus but it has strengthened my faith that there is a Creator."*

*"...as I was raised Buddhist"*

*"Some questions I had about how God would want to have this world of harmony but would create bad "bugs" such as*

*the bacteria and viruses were answered during the lecture through discussion. The Christian World View presentation also helped with my understanding and respect of Christianity."*

*"...the Catholicism that I practice is much more different than the Christian view". Coming to class and having prayer has allowed me to be more open minded to the Christian Worldview*

*"I do not follow any religion...the knowledge we obtain from classes like microbiology will play a part in our willingness to help others out of the kindness of our hearts"*

*"My faith has not been strengthened or increased, but rather reassured".*

Table 2. The aspects of CWV within the context of microbiology

Year/ # of students	CWV in Microbiology
2016 (N=117)	78
2017 (N=163)	82
2018 (N=209)	112
Total (N=489)	272

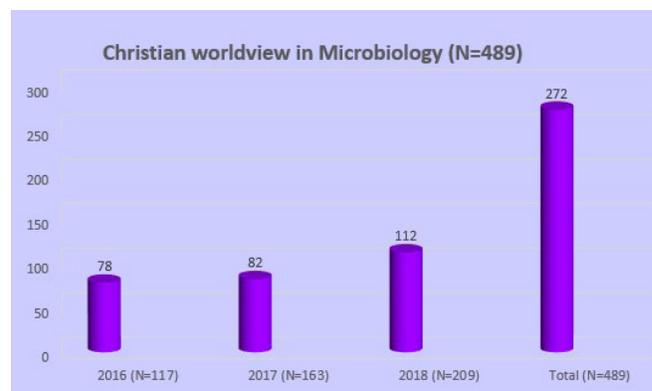


Figure 2. The aspects of CWV within the context of microbiology

Table 2 and figure 2 show student responses that expressed aspects of CWV within the context of microbiology. 272 (56%) students articulated aspects of CWV application to Science and future career as reflected in the sample of student responses below:

*“Learning about pathogens and discussing the question, if God is good why he created harmful microorganisms helped me strengthen my faith. I was able to relate it to the real world where I often find myself asking, “Why do such bad things happen?” God doesn’t create bad, humans create bad, and with the first sin things that were supposed to be beautiful started inhabiting areas where they are forced to be harmful in order to survive. God doesn’t create evil, but he does find a way to turn evil into good.”*

*“I was able to see, personally, how all different types of bacteria and microorganisms play a huge part in our daily lives and we see that a majority of them cause much harm due to the act of sin in the world but because God loves us and cares for us, we have grace and forgiveness of our sins and we are now able to have the capacity that God has given us to be able to combat these specific diseases and learn about them and see how we can, as a community, put our brains, our experiences, and our skills that God has given each and every one of us to come together and fight off these diseases...Not only that but God is the one who gives us the blessings and we are to manage them, so God gives us the opportunities and the tools to be able to learn all about His creation and the blessings and the gifts that God gives to us and we are to manage them and use them for His glory and His kingdom...to be able to stop these diseases and help save people around the world, sharing the hope of Jesus and the light and love of Jesus to the people around us, our community, and the world, saving one person at a time in Jesus name and helping the world and allowing Jesus to shine His light through us so that people will know Jesus through us.”*

## THE FINDINGS

The results of the study proved that students’ personal faith was impacted significantly (76%) due to IFL in the science class and they were able to articulate aspects of the CWV (56%) within the context of microbiology.

A. This study demonstrates that IFL requires both consistency and coherence (Harris, 2003). Consistency exists in the relationships between new learning and what is already known. Coherence is in the relationship that creates a unified, interrelated set of ideas. All of what one knows must fit together into a coherent whole (Moore, 2013). Students received consistent and coherent IFL in biology classes by the application of the Christian worldview, connecting scripture to science and having prayers in every class. The consistency and coherence are reflected in these students’ responses:

*“The bible verses in Microbiology Lab this semester have been encouraging and really keep my mind on track of the big picture, and that I am going to school for Him.”*

*“Throughout the microbiology lab so far, I now that God has a purpose for everything. Praying in the lab has helped me realize that I am on the right path that God wants me to be on.”*

*“Every morning before lab class I like how we get to pray, it really shows our relationship between our fellow classmates and God. I feel closer to Him going to this Christian university but having a class like this one, really brings my spirit up.”*

*“I’ve always been a little bit uncomfortable with science because there is a lot of debate between Christians and other religious groups about creation and how things came about. But Dr. S has proved that each lesson we learn in lab can easily be applied to our faiths by sharing verses and applications with us each week.”*

*“Since I am going to be working in a science field I love seeing how God is going to work through it and through me, so I can help people in my future career. I love seeing how open professor Daisy is with her faith and how she shows us how God is in everything. I think it has definitely opened my faith into new perspectives and I*

*cannot wait to see how God works through us throughout the rest of the semester!"*

- B. This study also demonstrates how integration can/should occur university-wide as expressed in this student response:

*"Many of my other classes at a private, Christian university in the Southwest United States do not include anything about the Christian worldview, without being told you would never know that you are at a Christian college in these classes... it should have the Christian faith involved in every class which unfortunately is not the case."*

The students benefited from genuine faith integration as they learned science through the lens of scripture and this cannot be acquired from taking mandatory Christian worldview courses. The findings proved that integration of faith in science not only strengthened students' faith but also helped develop the CWV perspective of microbiology.

## DISCUSSION

The success of integration of faith and learning in higher education depends on the attitudes of the faculty which aligns with the university's mission. Sheer (2010) listed the commitments of integration of faith and learning: "1) developing and maintaining a thorough knowledge of Scripture, 2) living an active consistent Christian life, 3) supporting students while expecting academic excellence, 4) having expertise and experience in the curriculum area, 5) providing specific integration of faith and learning experiences with curriculum material, and 7) developing a classroom environment where students feel a sense of belonging and acceptance" (p.93). The survey results show that the aforementioned list has been truly accomplished in this instructor's class. An average of 76% out of 489 students in biology classes responded yes, to indicate their personal faith has grown stronger and 24% students indicated that IFL did not strengthen faith or their faith remained same.

While the impact of IFL has been surveyed at the University level, this study offers the first look at the course-level by an instructor teaching science. On campus, professors are considered the primary influence in the integration of faith and

learning (Hauptman, 2013; Bowman, 2015; Kaul, Hardin, & Beaujean, 2017). This was expressed in the following student responses:

*"One of the reason I chose to attend a private, Christian university in the Southwest United States is because in a predominantly science field, it is easy to be swept away by professors at non-Christian universities with very strong beliefs of things that I do not personally agree with."*

*"Science professors would try to disprove something that Christians believe to be true, but having a class that focuses on both helps people to use science to their advantage."*

It is also noteworthy that effective integration occurred because the professor is not only a subject matter expert in the academic discipline but also grounded in the Christian world view. This was pointedly expressed in the following student responses:

*"Having professors teach with a Christian foundation rather than an evolutionist background has shown me the truth of God throughout science."*

*"She has asked some ethical questions that make you state your morals and stances on certain touchy topics, but I like how she always backs up her response to the questions with the Bible."*

*"I really appreciated the fact that you would take a couple of minutes of your lecture to explain the deeper meaning behind several bible verses to us. A common mistake when reading the bible is misinterpretation, so I believe it to be very beneficial when people who are knowledgeable in the bible discuss the deeper meaning to others."*

*"My favorite and most convicting thing we did was when we discovered ethics in the medical field when we talked about if assisted suicide was a moral thing to do. These things really made me think and made me evaluate God's role in the medical*

*community and if everything that we do in a healthcare setting is actually moral. I am so glad we covered these things and my eyes were opened so much to ethical issues in the medical field and deeper critical thinking.”*

Clearly, students developed good analytical and critical thinking skills due to this IFL strategy. It enabled students to grapple with, the way CWV supports or conflicts with the accepted professional code of ethics. Also students learned how CWV established boundaries in scientific research and its application.

Perfect and holistic integration of faith and learning is not realistic, but it can be accomplished with great success through dedicated teachers with humility. Humility is a significant factor in what makes for excellent, integrated college teaching (Bain, 2004). Great teachers, according to Bain, understand “how much they don’t know and that in the great scheme of things their own accomplishments place them relatively close to those of their students” (p.142). As flawed folks, sometimes they fail to integrate perfectly, thus making them to rely on God more rather than doing IFL in their own strength. They demonstrate to students their dependence on God as their ultimate source of faith integration. Thus faith integration by role modelling inspires students to integrate faith in school and in their future vocational callings. This was perfectly expressed in the following student response:

*“After attending a private, Christian university in the Southwest United States for two years this is the first time I have had a teacher incorporate faith into my learning experiences. While praying before every class and reading bible verses relating to our topic of learning I was able to understand how to incorporate my faith into my everyday life. I haven’t experienced faith outside of my Christian Worldview class here at a private, Christian university in the Southwest United States and it was really interesting to see it in the light of a new environment. I never thought I could relate a bible verse to an experiment done in microbiology but after Daisy introduced this to me it opened my eyes to a new light of faith. It was very heart-warming*

*to have someone pray for my health and wellness in my education every day before class. I believe that this shows how much Daisy truly cares about her students. In conclusion, I believe that the integration of faith and science strengthened my personal faith in Jesus Christ as it has taught me how to incorporate my faith in my future career as a pediatric nurse and inspire kids with my love for Christ as Daisy does for her students.”*

IFL in this class occurred naturally due to the instructor’s personal relationship with God in Jesus Christ by the Spirit and through his word. Also, incorporating Christian worldview into science was not challenging because the instructor uses scripture to interpret scripture instead of private interpretation of scripture. The instructor firmly believes, allegories, types/pattern, parables or figures of speech are meant to be taken figuratively. But for the most part a straight-forward interpretation of scripture is the best approach; the way language is meant to be plainly understood.

## CONCLUSIONS

This study provides a snapshot of how IFL in science influences spiritual growth of students preparing for health care careers. The impact of IFL on the personal faith of students was positive and accomplished the following outcomes:

1. Affirmation of Christian faith for believers
2. Faith flourished and grew stronger
3. Students both Christians and non-Christians gained understanding of the Christian worldview of science.

The findings align with previous reports of college students’ religious beliefs being strengthened during their college experience (Stanton, 2013). The data from this study was encouraging in terms of student-retention in STEM majors. IFL helps students and their families to not shrink away from pursuing science but see it as a means to glorify God. Integration of faith and learning bears fruit when put into practice. Intentionally planned methods for faculty to integrate faith and learning in Science courses meets the spiritual and academic needs of students.

A private, Christian university in the Southwest

United States with a clear mission of bringing faith and learning together can benefit by reflecting on the lessons learned about integrating faith and learning in science. When the university implements integration of faith and learning, this should be viewed as university culture, not a mandated regulation. Promoting change does not happen overnight. Integration of learning and faith requires extensive dedication and training. It is difficult to make connections between the content being taught and anything else if one does not have a strong grasp of the foundational concepts in the subject matter of science and faith.

The holistic model of integration of faith and learning no doubt encompasses the whole campus, not just some mindful and devoted Christian instructors. However, the responsibility of integration of faith and learning belongs primarily to faculty. The attitudes of the faculty should therefore align with University mission for integration of faith and learning. Since integration of learning and faith requires depth of knowledge in both science content and spiritual issues, seasoned faculty members can develop a training plan by sharing their best practices and resources with their peers. With experienced faculty who are well-versed in integration of faith and learning, role modeling, coaching, and teaching should follow.

The important implication of this study is that it is possible to enrich students' faith in Jesus Christ through integration of faith in science learning. When CWV is incorporated across curriculum and classroom, it transforms students to become more like Christ — to serve God and others.

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