

## Does Teaching About Evolution in Adventist Schools Destroy Faith in God?

How many of us as Adventist teachers have heard parents say, “My kid went away to college and became an atheist”? For example, Bryan Ness recounts an anecdote regarding college students who, upon returning to their home churches, confront the minister. These students learned of the “certainties” of evolution, which put them into a “spiritual crisis.”<sup>1</sup> Or, as Leonard Brand shares regarding a conversation he had with a colleague who “explained he once was once a Christian . . . but when he studied evolution in college, he realized that Christianity was not true.”<sup>2</sup>

We suggest these anecdotes are not

isolated events, and this “confrontation” between evolution and creation is not going to occur just because a religious individual went to a secular university. The “certainties” of evolution are constantly bombarding humanity through media, pop culture, and secular literature; even the courts<sup>3</sup> get involved. How then can Seventh-day Adventist educators intellectually prepare their students to be factually literate about the Seventh-day Adventist worldview, yet knowledgeable about and tolerant of opposing theories? We suggest that a purely apologetics-based educational strategy that defends only one particular worldview or merely introduces differing views may inadvertently bias individual learning, laying the foundation

for a future intellectual crisis. This could undermine confidence in a Seventh-day Adventist-based understanding of the nature of reality.

Ian Barbour defined four science-and-religion interaction typologies: conflict, independence, dialogue, and integration.<sup>4</sup> Of the four, “dialogue,” where both science and religion can communicate and contribute to each other, has a long history in Seventh-day Adventism (e.g., George McCready Price, 1870-1963; and Frank Marsh, 1899-1992). Both of these Magisteria (Science and Religion)<sup>5</sup> contribute to a more complete understanding of our lives, our purpose, and our universe while enabling pursuit of intellectual

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and meaningful investigations via their own methods.<sup>6</sup> The view that science and religion are separate and antagonistic entities is not supported<sup>7</sup> when one holds a mature understanding of God and His providence.

A far more complete view of reality is gained by embracing the discoveries of science and revelations of God, as we have learned through the Seventh-day Adventist Christian approach (see Box 1 on page 10). As Scripture succinctly commands: “Test all things, hold fast what is good” (1 Thessalonians 5:21, NKJV).<sup>8</sup> However, public discourse regarding the place of religion and science often portrays them in “conflict,” or worse, stridently at “war.”<sup>9</sup>

Student presuppositions and misconceptions about the relationship between science and religion are of importance to Seventh-day Adventist educators, as are educators’ biases when they, in turn, educate students. Indeed, we all view reality with biased lenses. However, increased breadth of learning expands our overall understanding of God and helps instill in us a commitment to self-reflection. In Ellen White’s words: “Those who are uneducated, untrained, and unrefined are not prepared to enter a field in which the powerful influences of talent and education combat the truths of God’s Word. Neither can they successfully meet the strange forms of error, religious and philosophical combined, to expose, which requires a knowledge of scientific as well as Scriptural truth.”<sup>10</sup>

Jeremy Uecker and Kyle Longest suggest that when college students, as emerging adults, adopt the view that religion and science are at odds, they are less likely to be religious later in life.<sup>11</sup> However, the historical record of Seventh-day Adventist educators and researchers includes those whose successes were the product of both their religious and scientific worldviews. The authors of this article regard the “at war” view as largely hyperbole and so, guided by our Adventist beliefs, we believe educators in Adventist schools ought to provide students a

broader understanding of how science and religion can interact. College students, as emerging adults, will have the opportunity to shape the contours of the public, science-religion discourse. We suggest a more productive and proper science-religion discourse in which they can work together.<sup>12</sup>

Uecker and Longest found that religious young adults who rejected science and evolutionary thought re-

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ported higher religious affiliations than individuals who accepted natural forces for Earth’s creation. Or, more bluntly, college students who rejected science appeared to be more “religious” than their cohorts who actively engaged in seeking to understand science.<sup>13</sup> However, common knowledge and experience reveal that religiosity and piety may be appearance rather than substance. As Seventh-day Adventist educators, one of our objectives is to support and enhance our students’ spiritual journeys. However, our experience indicates that too often, fear of “losing a soul” leads

many Christian educators to cite studies like Uecker and Longest as the basis for suppressing any discussion of contemporary scientific explanations for the origins of life, human existence, and the cosmos because they fear such discussions will be detrimental to and impede understanding and development of a strong faith. Examples of purely doctrinal religious education, as evidenced by some zealot Arabic schools’ teachings, indicated that even though graduates exhibited faithful adherence to their native faiths, they expressed intolerance toward secular and scientific ideas, and also toward the tenets of non-native religions as well—an indication that intolerance of any set of ideas may lead to intolerance of all. In other words, indoctrination that pits one specific ideology against another may have a “spillover” effect that results in intolerance being expressed toward all differing ideas.

The university is an institution of scholarship and education, a place to exchange ideas. Ideally, it provides an atmosphere where students learn how to converse about diverse ideas and engage with and gain understanding from other fertile minds. In *The Idea of a University*, Newman stated that education is “the power of viewing many things at once as one whole, of referring them severally to their true place in the universal system, of understanding their respective values, and determining their mutual dependence.”<sup>14</sup> Thus, indoctrination that focuses on one ideology to the exclusion of others contradicts the call to Christian universities to present “all branches of knowledge”<sup>15</sup> or as the Scriptures declare, “test all things . . . hold fast what is good” (1 Thessalonians 5:21). Thus, we suggest that science and religion are not only compatible, both being God’s creation, but also are both necessary to develop a deep and abiding faith. For example, as Francis Collins, a Christian and former head of the Human Genome Project, now the director of the National Institutes of Health in Bethesda, Maryland, U.S.A., suggests, “The God

of the Bible is also the God of the genome. He can be worshipped in the cathedral or in the laboratory.”<sup>16</sup> Our Seventh-day Adventist heritage, doctrines, and ideals lead us to believe that God is the Ruler of all, the Creator.<sup>17</sup> Foundationally, our worldview and educational philosophy rest on God as Creator, the Bible, and nature. Therefore, we find it “un-university”-like when secular institutions reduce opportunities for student religious interaction and learning; we wish not to commit a similar fallacy by overly subjugating science-based evidence. In the words of Ellen White: “Since the book of nature and the book of revelation bear the impress of the same master mind, they cannot but speak in harmony. By different methods, and in different languages, they witness the same great truths.”<sup>18</sup>

At AdventHealth University (AHU) in Orlando, Florida, U.S.A., we (the authors of this article) teach a course using a dialogue approach, where we address characteristics of science and religion, their similarities and differences, and their strengths and weaknesses. Even though we had seen a great quantity of anecdotal information suggesting that teaching evolution can decrease faith in God, we sought to assess whether this could occur, at least for our students. We devised a pre- and post-test analysis that asked students to rank their confidence regarding their belief in God and how well they could respond to the problem of pain and suffering. In the remainder of this article, we present and discuss the findings of our three-year study.

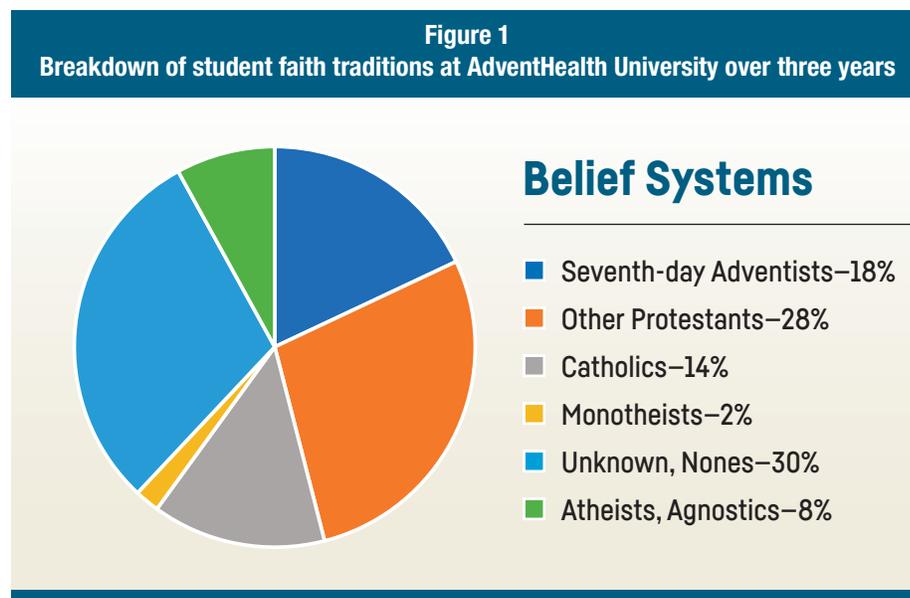
### About Our Institution

AdventHealth University (AHU), then Florida Hospital College of Health Sciences, accepted its first students almost 30 years ago. The institution was established from the outset as a Seventh-day Adventist school specializing in health-sciences education and is accredited by both denominational and public entities. Throughout its history, its primary focus has been on educating individuals in the allied-

health sciences, e.g., occupational therapy, nursing, imaging sciences, physician’s assistant, physical therapy, etc. AHU is unique in comparison to most of our sister colleges and universities in the North American Division because most of our students are not Seventh-day Adventists.

Over AHU’s history, its student population has averaged approximately 18 percent Seventh-day Adventist (see Figure 1). The school thus has always had a spiritually and culturally diverse student body, although more than 90 percent of its students self-report religious affiliations and spiritual journeys.

the importance of “whole-person” care—careful nurture of mind, body, and spirit—would likely not be as well incorporated into student worldviews if they couldn’t recognize the need to integrate faith and science. This could result in our school producing health practitioners who are comfortable only in either the realm of religion or the realm of science, or practitioners who see them as conflicting areas of content, which could pose an impediment to whole-person care. As a result, by 2005, an upper-division undergraduate course that discussed science and religious ideologies was added to the curriculum.



Because of AHU’s Seventh-day Adventist mission, in conjunction with the necessity to educate students for the demands of the health sciences, the administration and biomedical faculty recognized the need to develop a course covering topics in science and religion. Experience revealed that just having separate science and religion courses did not provide students with a sufficient understanding of the mutually beneficial relationships science and religion can have. Our observations and experience as educators indicated that separate courses of religion and science inadvertently supported the assumption that these two domains were incompatible. We recognized that

### The Course: Issues in Science and Religion

The course we teach is called “Issues in Science and Religion.” It is cross listed in biology and religion: BIOL/REPH 475. Students can earn upper-division credit in either science or religion. Initially, this course was an upper-division elective; but departmental leadership in conjunction with senior administration considered the material so ideologically valuable that within a few years of its initiation, the course was voted to be a required course for all bachelor’s degrees in the

Department of Health and Biomedical Sciences (BS in Health Sciences; BS in Biomedical Sciences).

The course is led by two Seventh-day Adventist professionals: one trained in biology, the other in religion. In this course, students are exposed to 20 lectures that cover a broad range of topics—including theodicy, miracles, theories of origin, strengths and weaknesses of evolution, intelligent design, and creation. Our dialogue approach, however, is not only a juxtaposition of science on one side, religion on the other for the topics covered, but also provides deeper discussion and dialogue regarding contemporary issues within the sciences and religion. In addition to the topics mentioned above, we explore Noachian flood theories, past extinction events, the geologic column, radiometric dating techniques, and fossils as well as, but not limited to, hermeneutics, the philosophy of science, logic and fallacies, cognitive dissonance, and limits of science and religion.

We state our biases for intelligent design from the outset, which are pivotally founded on Seventh-day Adventist theology. However, we are university professors. We do not believe it is appropriate to proselytize (religion or science) to our students, whom we view as our colleagues. There is no attempt to convince our students to embrace our convictions. But of course, when asked about our beliefs, we will respond in kind, to facilitate dialogue and encourage open discourse, questions, and a diversity of ideas. Because of the diversity of our students, we are sensitive about being inclusive. We do not berate an atheist student, for example, for articulating atheistic views, nor do we congratulate a believer for his or her faith. In each case, we assess how well students can summarize their views (evidence-based, well-supported) and what type of tone they use to profess their ideas (e.g., neutral, dismissive, condescending, combative, congenial, etc.).

This educational style with its

seeming absence of evangelizing has made some people uncomfortable. The implicit fear was that we might “lose” some faith-based students. However, what we have found appears to be quite the opposite.

#### Methods

Our analysis goal was to conduct an initial, exploratory assessment of

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whether our pedagogy was possibly reducing students’ confidence about their view of God and suffering in the world. To do this, we utilized a single-cohort and a pre- and post-testing design: All students, in each course, could take the pre- and post-tests. Pre- and post-testing methods can be effective in detecting the effects of teaching methods.<sup>19</sup> Our analysis question was this: *Does our dialogue design affect student confidence in their belief in the existence of God and their understanding of pain and suffering in the world?*

To assess student confidence regarding their answers to two worldview questions, we instituted a straightforward survey in our course. Our study began in 2017, and at the very beginning of the first session of the course, we asked students to self-report, on a Likert scale from 1 to 5 (with “1” being the lowest rating and “5” the highest), their reactions to these questions: (1) “How confident are you that there is a God/deity?” and (2) “How confident are you in your response to suffering?” During the final session, we asked students to again self-report their confidences regarding the same questions, using the same Likert scale.

Likert-scale data are ordinal-measurement scale values, which are not amenable to quantitative analytical techniques.<sup>20</sup> Often, though, ordinal data are assessed using averages or other ratio-level assessments. Since averages or percentage calculations of ordinal-scale data can provide heuristic, qualitative-level comparisons only, we pooled all Likert-scale responses for the analysis period and then calculated the frequency of the pre- and post-test, self-reported Likert rankings: the cumulative total number of 1’s, 2’s, 3’s, 4’s, and 5’s. From the pooled pre-test and pooled post-test frequency data,<sup>21</sup> we then calculated the overall proportions of the different Likert-scale choices for both questions on the pre- and post-assessments. We conducted a chi-square test for independence on the pre- and post-assessment Likert responses for each question. Our null hypothesis: *The distribution of student Likert responses on the post-assessment would be independent, not different, from the pre-assessment responses.*

#### Results

For each trimester analyzed, average student confidences for both questions tended to remain similar or increase. Results from the overall averages for the six trimesters of the study (Fall 2017 through Fall 2020) showed that average confidence in students’ belief in God/deity increased from 4.47 to 4.55 (a two percent increase);

whereas the overall average of Likert rankings for confidence in their response to pain and suffering increased from 4.01 to 4.47 (an 11 percent increase).

Regarding the frequency and proportion analyses for the pooled confidence questions, the Likert responses shifted more to the “very confident” side (see Figure 2A). Focusing on the results of the question about students’ confidence in there being a God (Figure 2A), at the beginning of the course, 65 percent of the students who responded stated that they were “very confident” there is a God. By the end of the course, 73 percent of the respondents claimed to be “very confident” there is a God (Figure 2A). Even though fewer students responded to the post-assessment due to normal attrition, the proportions for post-assessment are not just a function of a smaller sample size. The raw number was 58 students selecting “5” on the post-assessment (57 on the pre-assessment), and the slope of the curve from “not confident” to “very confident” was steeper on the post-assessment than the pre-assessment (Figure 2A).

The results of the pre- and post-assessments of student confidence about their response to suffering in the world were even more dramatic than the results regarding their belief in a God. Overall, on the pre-assessment, 25 percent, 37.5 percent, and 35 percent of the students chose a confidence level of “3,” “4,” or “5,” respectively (see Figure 2B). In the same Likert-scale order, on the post-assessment, 7.7 percent, 28 percent, and 63.5 percent responded with these rankings, respectively (Figure 2B). In raw numbers, the number of students choosing a “5” on the pre-test for this question was 31. By contrast, 48 students chose a “5” as their confidence level on the post-assessment.

Comparison of the pre- and post-assessment distributions of student Likert-scale choices for both world-

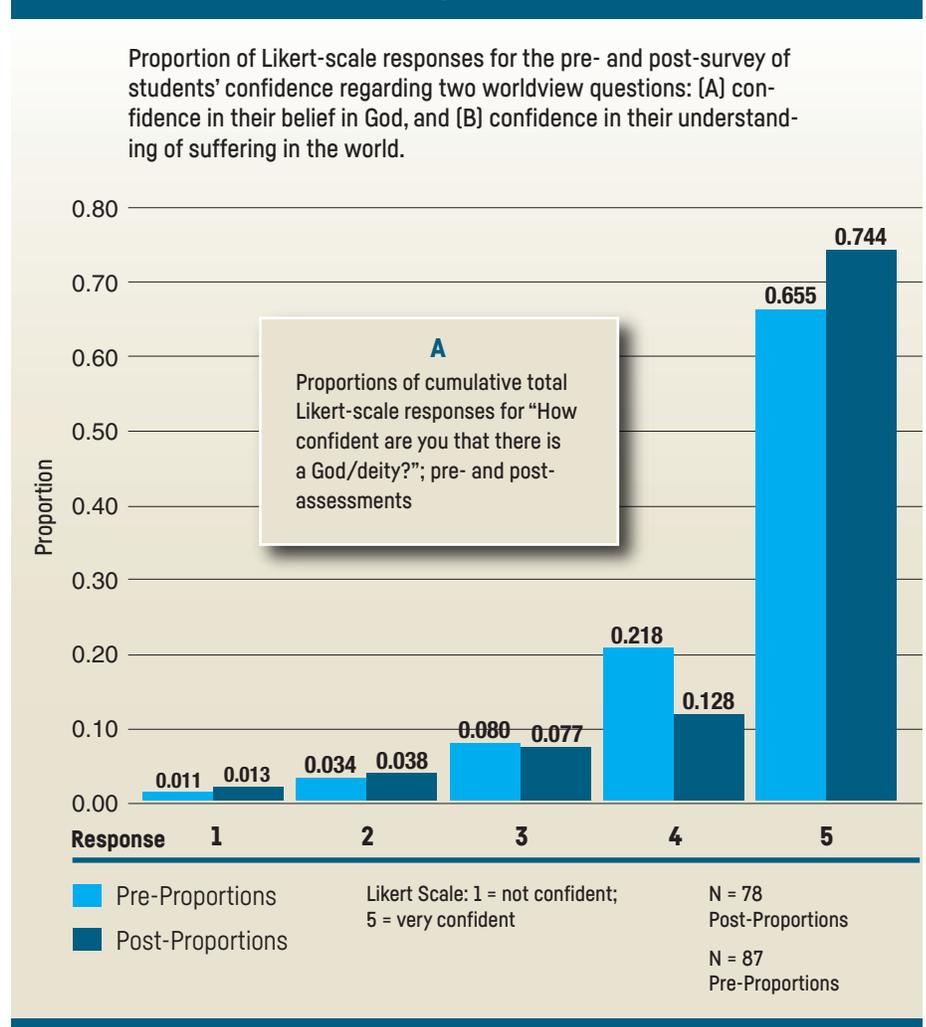
view questions (belief in God and understanding the problem of suffering) showed that the number and proportion of students choosing the response “very confident” increased after having taken Issues in Science and Religion (Figures 2A and B).

The results of the chi-square statistical tests for independence indicated that the pre- and post-test confidence results for student belief in God were not different:  $X^2$  (df = 4,  $N$  = 165) = 2.4,  $p$  = 0.66. This result was somewhat expected, as at pre-assessment, students’ confidence in their belief in God was already weighted heavily toward “very confident.” These results leave little “room at the top” for the post-assessment. Nevertheless, the post-assessment average increased, as

did the proportion of students responding with a “5” (Figure 2A).

The results of chi-square test for student confidence regarding the problem of pain and suffering were rather different from the previous response. Post-assessment student responses regarding their confidence responding to the problem of suffering were significantly different from their pre-assessment responses:  $X^2$  (df = 4,  $N$  = 166) = 14.45,  $p$  = 0.006. This result indicates that the post-assessment responses were not independent of learning during the course and—together with increases in students’ confidence in their belief in God—that this course does not seem to negatively affect some aspects of faith-based worldviews.

Figure 2A



We found that student worldviews appeared to have been affected after having taken Issues in Science and Religion in the following ways: Students' belief in God did not diminish, and their understanding of the problem of suffering was enhanced (Figures 2A and 2B). We expected *a priori* that because of the preponderance of believers attending our institution, belief in God would be weighted toward the more confident segment of the analysis. And even though our experience suggested that students' confidence in their belief in God entering the course would not likely be diminished after encountering the course materials, the post-assessment findings reassured us that our observations were well founded.

What was more surprising was the extraordinary increase in student confidence regarding their response to suffering (see Figure 2B). Of course, we feel excited that a course focused on science and religion can support

and enhance emerging adult theistic understanding. Since AHU is primarily a health-care education university, the success in supporting students' spiritual confidence in their understanding of suffering is especially comforting. Of course, REPH/BIOL 475 is not solely capable of addressing the problem of pain; other courses that provide a God-centered approach to understanding suffering in the world (e.g., "Issues in Grieving and Loss") are also offered in the Department of Health and Biomedical Sciences. Our course forms part of a suite of courses that intellectually strengthen students' ability to respond to suffering as they prepare to enter various health-care professions. However, the course Issues in Science and Religion forms an educational bridge between the science, religion, and ethics courses.

In a larger context, though, being able to thoughtfully regard this problem of suffering in the world is important, as the problem of pain is often

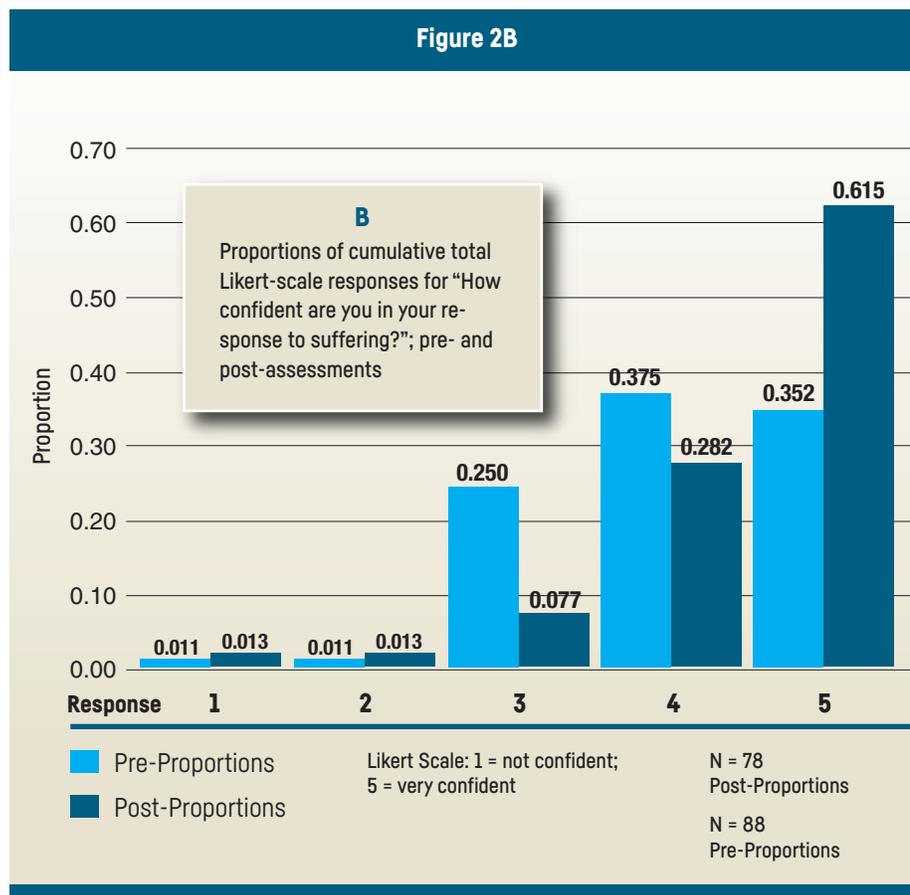
cited as the main reason for losing faith.<sup>22</sup> Lee Strobel in *The Case for Faith* lists the problem of pain as the top reason people reject Christianity.<sup>23</sup> Since a major academic goal of the authors of this article, and for Seventh-day Adventist higher education in general, is to assist and support student religious understanding, desire, and adherence, we have concluded that our course can positively and beneficially increase student understanding of suffering.

Returning to the opening story about the student in religious crisis regarding evolution, the minister invited dialogue and discussion with the student instead of being defensive or dismissive. We address evolution/creation in like manner: We present and discuss these worldviews on their merits while noting their limitations. For example, we spend 90 minutes discussing the strengths of evolutionary theory, which can be very disconcerting to students who have been taught primarily young-Earth creationism. In the very next class, however, we describe the weaknesses, limits, and flaws of evolution, not merely from a creationist standpoint, but also based on evolutionary research and literature itself! This in turn can be quite disconcerting to those students who were primarily reared to accept evolutionary thought. Students often remark that in the past, when they would ask questions about evolution, the responses would pit creationism against evolution. When students learn that evolutionary theory faces real questions posed by evolutionary researchers, they begin to realize that worldviews have strengths and weaknesses. One need not necessarily attack one worldview through the lens of another; each worldview can be discussed within its own intellectual framework.

### Conclusion

Most of our students are somewhat surprised to learn that the "giants" of modern science (Bacon, Newton, Galileo)

**Figure 2B**



leo, Priestley, to name a few) were believers, and it was precisely their belief in a non-arbitrary, rational God that was a major impetus for them doing science in the first place. More generally, much of the development of modern science can be directly linked to a Christian worldview.<sup>24</sup> We are both supporters of science and religion. Considering the amount of hubris regarding the power of science that media portrays, when students learn that even world-renowned scientists state that science has limits,<sup>25</sup> we suggest that this helps them better understand the place of religion/faith in their lives.

It may seem counterintuitive to suggest that studying evolution would be appropriate in a Seventh-day Adventist university, as this often stimulates fear that students might lose faith. Our experience and analysis suggest that engaging in a dialogue that includes evolution does not have to diminish faith (see Figure 2A). Students crave an environment where all questions are welcomed and where all theories are thoroughly explored.<sup>26</sup> Questions are the foundation of learning, and yet there seems to be a hesitancy to review theories that may be opposed to one's system of belief.

We believe that open dialogue and

discussion regarding religious as well as secular thought, including evolutionary theory, is better for a well-rounded education and for spiritual nourishment than dismissal of ideas that appear to be counter to, for example, creation or intelligent design. We believe that asking students to engage with alternate views can act as an “intellectual vaccine.” Such “cognitive inoculations,” we suggest, could prevent worldview “shock.” Educating through dialogue on complementary perspectives of science and religion is also part of our spirituality model at AHU.<sup>27</sup>

The metaphor of our model is that our institution should be a “watering hole” of spiritual refreshment drawing in those who thirst, and not a “fenced in” model of those on the “inside” separated from those who are “outside.” Our institution is very diverse, ethnically, racially, and spiritually (as shown in Figure 1), and as a result, our students are on different spiritual journeys. Although we can't control what our students will encounter in the “real world,” we can provide an intellectual foundation for their emerging adult understanding through how we educate, in the classroom and through student encounters, so that our students' confidence in their faith-based worldview won't be cracked or broken when

struck by other well-accepted and articulated ideologies.

Students' reactions to this class have been fascinating to read. During the final two weeks of the class, they are asked to write a position paper in which they describe the impact this course has had on them personally. While there were a lot of great testimonies (and some frustrations detailed), most of the students stated that this class had a profound impact on them. For example, “I had decided atheism as the ideology which appealed the most to me. . . . I used to believe that science was on the opposite . . . end of a battlefield [from religion]. . . . I now view it as two kids playing in a park with each trying to lift the other one higher and higher onto a tree.”

Another example, “With the help of material from the class Issues in Science and Religion strengthening my stance, although they have some differences, I believe that science and religion share some similarities, even explaining some events where the other cannot.”

And a third: “Before I began this class, I was very excited to push my thinking outside of the box by asking myself questions outside of my comfort zone. I was raised in a [religious] household full of scientists and mathematicians. . . . This class was a good opportunity to prove to myself that even when I have to ask myself questions outside of my comfort zone, my God is still real, and science is still reliable. I still need one to understand another and vice versa.”

In conclusion, we found our educating technique, when applied to what could be a controversial course/topic(s), was supported, based on our findings and student comments. We hope that when our students return to their home churches or continue their studies at other universities, instead of spiritual crisis, they will experience spiritual renewal of God's two books: the Bible and the book of nature. ✍

### Box 1. Religion and Science Resources for Further Reading

**Leonard Brand and Arthur Chadwick**, *Faith, Reason, and Earth History: A Paradigm of Earth and Biological Origins by Intelligent Design*, 3rd ed. (Berrien Springs, Mich.: Andrews University Press, 2016), specifically chapters 8 and 10.

**Leonard Brand**, *Creation? Really?* (Nampa, Idaho: Pacific Press, 2019).

**Geoscience Research Institute** has several resources (<https://www.grisda.org/resources1>) available on the topic of religion and science. From articles (<https://www.grisda.org/articles>) to books (<https://www.grisda.org/books>) to educational websites (<https://www.grisda.org/top-ten-websites>) and much more.

**General Conference of Seventh-day Adventists**, “What Adventists Believe About Creation” (2020): <https://www.adventist.org/creation/>. See also <https://www.adventist.org/wp-content/uploads/2020/06/ADV-28Beliefs2020.pdf>.

**L. James Gibson, Ronnie Nalin, and Humberto Rasi**, eds., *Design and Catastrophe: 51 Scientists Explore Evidence in Nature* (Berrien Springs, Mich.: Andrews University Press, 2021).

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8. New King James Version (NKJV). *The Holy Bible, New King James Version*, Copyright © 1982 Thomas Nelson. All rights reserved.
9. Joseph O. Baker, "Public Perceptions of Incompatibility Between 'Science and Religion,'" *Public Understanding of Science* 21:3 (February 2012): 340-353; Richard Dawkins, *The God Delusion* (New York: Houghton Mifflin, 2006).
10. Ellen G. White, *Gospel Workers* (Washington, D. C.: Review and Herald, 1915), 81.
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13. Uecker and Longest, "Exposure to Science, Perspectives on Science and Religion, and Religious Commitment in Young Adulthood."
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15. *Ibid.*, 127. Newman stated that "all

branches of knowledge are connected together, because the subject matter of knowledge is intimately united in itself, as being the acts of the work of the Creator." Thus, it is the work of the Christian university to present knowledge as a united whole, rather than in fragmented, disconnected areas of content. The Christian university also must study best approaches to transmitting knowledge in a way that integrates faith with learning. For more, see David I. Smith and James K. A. Smith, eds., *Teaching and Christian Practices: Reshaping Faith and Learning* (Grand Rapids, Mich.: Eerdmans, 2011).

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21. Frequency data are ratio-level data, which can be evaluated using parametric statistical techniques.

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