



Mark A. Strand

Communication

Introducing High School Students to Scientifically Faithful Views of Genesis 1–3

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This communication describes the process of designing a six-week course on scientifically faithful views of Genesis 1–3 for eleventh- and twelfth-grade Sunday School students in an evangelical church. Students significantly changed their beliefs about science, but changed their beliefs about specific biblical interpretations less. Practices are suggested for introducing challenging science and faith topics to high school students. One church experience has shown that a church with a strong young earth creationist history can be open to discussing scientific evidence about human origins from a biblical perspective.

The creationism movement has used books, videos, and conferences to promote themselves as the *de facto* option for evangelical Christians wanting to understand human origins.¹ Using populist and accessible methods, they have been particularly effective at inculcating this view in the thinking and curricular decisions of Christian school teachers and home schoolers. Consequently, 40% of Americans report to hold a young earth creationist (YEC) viewpoint.²

As a consequence, many young people in evangelical churches have grown up taking in young earth creationism materials from organizations such as Answers in Genesis (AIG). This creates intellectual and spiritual conflict when these young people are faced with current scientific understandings on origins, including biblical approaches advocating an old earth and a long process of human origins. This often happens when they begin university studies. What is more, there is evidence that this phenomenon is con-

tributing to young people leaving the church.³

In 2015, funded by the John Templeton Foundation, Trinity International University began “The Creation Project” within the Carl F. H. Henry Center for Theological Understanding,⁴ to catalyze a field of study around the doctrine of creation that is faithful to scripture and informed by scientific evidence. This became the inspiration for a project to introduce science and faith topics to high school students in a Sunday school class in a midwestern evangelical church.

There were two hypotheses which guided this project. The first was that it is possible to discuss evolution when teaching human origins to young people in an evangelical church with a strong young earth creationist bent without causing extreme conflict. The second was that students’ beliefs about interpretations of Genesis 1–3 and science topics could change throughout a six-week course.

This communication will describe the process of designing this course. It also will suggest practices to help churches influenced by YEC viewpoints to open up to a more expansive view of scripture,

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and to the ways in which the findings of modern science inform biblical exegesis and theological conclusions.

Project Description

In the spring of 2017, the author met with the elders of the church to discuss the topic of how to handle differences of opinion regarding the age of the earth and the process of human origins. This included discussion of the denomination's statement of faith and clarifying that belief in an old earth and human evolution was within the parameters of the statement.

This was followed by designing a six-week course for seventeen 11- and 12-grade students (table 1), which was delivered in the fall of 2017. Materials used in the course included the Bible and the following books: *Genesis 1–4* by John Collins; *Evangelical Convictions* by the EFCA Heritage Committee; *How I Changed My Mind about Evolution* by Kathryn Applegate and J. B. Stump, and *When God and Science Meet* by the National Association of Evangelicals.⁵ Ten students completed a nineteen-item pre- and post-survey on beliefs and attitudes about issues pertinent to the science and faith conversation. The numerical results are available from the author upon request.

The objectives of the course were to help students to

1. understand that the doctrine of creation is essential,
2. do exegetical Bible study,
3. describe a variety of legitimate scientific interpretations of Genesis 1–3, and
4. see that science is a method and an opportunity for ministry, not an enemy.

The process of delivering the course followed several pedagogical principles. First, acknowledging that the topic is sensitive to many of the students, it was necessary to create a safe learning environment for all students. By “safe” I mean that students were free to disagree with the teacher and with each other, without fear of reprisal, or fear of being stigmatized for holding their viewpoints. Second, while being safe on an emotional level, it was equally important to challenge the students to study the Bible, and to learn the many genres of the Bible and how they affect biblical interpretation. Exegetical Bible study methods were used, including introduction to the historical context of the text and the genre being used. Third, the students needed to learn that there is diversity of opinion among people within evangelical Christian faith who hold to a high view of scripture; therefore,

Table 1. Six-Week High School Sunday School Curriculum

Week	Topic	Objectives
1	Genesis 1:1–2:3—The cosmos The Doctrine of Creation	Creation is an essential doctrine. Genesis 1 is a theological text.
2	Genesis 2:4–25—Creation of man and woman Relating science to the doctrine of creation	Scripture addresses issues to which science speaks.
3	Genesis 3:1–24—The entry of sin When science becomes an idol	Some people place excessive confidence in science.
4	“Why I can say that I believe the Bible, love Jesus and accept evolution.” Guest speaker, animal geneticist from the local university.	Science is a methodology. Science and theology can be integrated.
5	“STEM and Biblical Human Flourishing.” Guest speaker, engineer from a local engineering company.	Science can be used to serve humanity. Christians serve humanity. Christians are needed in science.
6	Students defend biblical and scientific arguments for both YEC, and for an old earth with a long process of biological development.	Help students reconcile any issues or conflicts.

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the students were required to explain and defend both sides of different issues, even those with which they disagreed. They were assisted in this process through the use of a polarity map. Fourth, based on the view that knowledge is personal,⁶ and that role models influence one's relationship to knowledge, two scientists from within the church where the course was held were invited to explain the relationship of their faith to their work as scientists.

Lessons Learned

Students entered the course with a variety of incorrect opinions about science. For example, students largely believed that Charles Darwin developed his theory of evolution in order to justify his atheistic beliefs, that human and dinosaur tracks have been discovered in the same rocks, that many scientists recognize that evolution is not a very good theory but still support it, that radiometric dating is not valid, and that there is no evidence for "macro-evolution." These beliefs form a significant part of the YEC position. The students had mastered this information, but when pressed to explain it, they were unable to give either a scientific or biblical explanation defending their position. However, it should be noted that by the end of the course, many students' beliefs about Charles Darwin's atheistic agenda and the co-existence of human and dinosaur tracks, and their skepticism about the evidence for "macro-evolution," lessened with time, demonstrating a willingness to change their opinion on those issues.

Student responses also showed confidence in the possibility for interaction between science and faith. For example, they showed openness to integrating knowledge from science and Christian faith, they recognized that science is not the only avenue to reliable information, and they acknowledged different types of epistemological authority. Students began the course with strong belief that the Bible is a reliable source of scientific information, but by the end of the course the majority of students had changed their minds, reflecting a better understanding of the type of information being conveyed in Genesis 1–3. Belief that "anybody who takes the Bible seriously will believe in young earth creationism" also declined somewhat by the end of the course.

Students showed significant improvement in accepting current scientific truths by the end of the course.

For example, student belief that believing the Genesis account requires rejecting evolution declined over time. Student skepticism that scientists are responsible for undermining people's belief in the Christian faith lessened. There was also increased confidence that science is a neutral subject and can be pursued by Christians.

This project showed that it is possible to help students expand their beliefs about science and interpretations of Genesis 1–3 in a six-week Sunday school course. Student views on some issues changed significantly. Bias against Charles Darwin and modern scientists, that they are driven by an atheistic motive, and suspicion that science which points to an old earth is bad science, were both reduced. Confidence that science can serve humanity, that science and the Bible address different issues, and that there is room for interaction between science and faith increased. Throughout the course, students increased their belief that the Genesis account of creation and evolution can both be true. It is surmised that students were willing to change their minds on questions about science and the work of scientists because these ideas were not a direct threat to specific truths of the Bible.

The literature is full of reports and research results confirming the possibility of a mutually beneficial relationship between science and Christian faith.⁷ Many scientists who are Christians view their work in science as a Christian calling; this was true of the guest lecturers used in the course.⁸ There are many scientists who are Christians who delight in teaching science, including teaching evolution.⁹ It has also been shown that there is no evidence that pursuing a career in science moves a person toward atheism.¹⁰ In fact, noted Christian philosopher Alvin Plantinga has successfully argued that science not only is not in conflict with faith, but that, rather, it offers support to theistic doctrines.¹¹

Through the process of delivering the course, a few negative outcomes were observed. Although holding adamantly to the authority of the Bible, the students were unfamiliar with the genres of the Bible and exegetical Bible study methods. Consequently, some students had largely accepted certain beliefs about the Bible, such as that the Bible is a source of scientific information, but were poorly equipped to defend or use that information. Therefore, students

seemed ready to expand their understanding of science and scientists in a positive way but were afraid of revisiting absolutist views held about the Bible. It must be remembered, however, that this was one short course, at an early stage in their lives, and there remains sufficient time for these understandings to mature. The testimonies of practicing scientists who have changed their opinions on topics of faith demonstrate that it is possible to expand one's scientific understanding while deepening one's Christian faith.¹² However, this must be done in a manner sensitive to the beliefs of the recipients, as explained by Pastor Mario Russo in his essay "Four Ways Pastors Can Shepherd Their Congregation through Discussions on Faith and Science."¹³

The preceding observations hold the possibility of varying interpretations. On the one hand, reluctance to change some views is a sign that these young people have convictions, and this is good. On the other hand, their convictions may be a sign that they are unwilling to learn, grow, and make the faith their own, preferring to cling to opinions given to them. Commitment to the Bible is commendable, but if held to without evidence or deep understanding, it can lead to a form of bibliolatry. These observations are a reminder of the work that needs to be done to affirm and nurture their devotion to the Bible, while also helping them make that foundation firmer and better able to stand up to the challenges they will face as they move into adulthood.¹⁴ This teaching should be done incrementally, in the same way that spiritual growth occurs, and not imposed upon young men and women as an absolute set of viewpoints that they must accept.

One of the concerns that is sometimes raised is that teaching evolution is a slippery slope, which will lead to sliding toward relativism on other issues such as morals. The argument is that Christian education for youth should increase confidence in the Bible at all costs, even if it means ignoring other forms of information, such as that derived by science. But this is a short-term solution. In time, these young people will be sophisticated enough to see the contradiction, and if they feel that they have been hood-winked, they will likely separate themselves from the one whom they perceive to have misled them.¹⁵ It is disingenuous to use dishonest methods to keep young people believing the Bible. It is far better to introduce them

not only to faithful biblical exegesis that takes seriously the many genres of scripture, but also to the evidence provided through the material world.¹⁶

There were also encouraging process outcomes. Student attendance was good throughout the course. Student engagement was also high, even on challenging or contentious topics. The goal was to teach the course in a scientific way as much as possible. Science is a method of approaching questions more than it is a corpus of conclusions. Therefore, it is important to teach students to think like scientists; this means they are taught how to identify the question being asked, find the information necessary to answer the question, evaluate that information, and then answer the question as best as one is able. Finally, it means accepting that this is not the final answer, but a closer approximation to the truth than one previously held. That is the way of science. It is important to teach in a way that asks students to use facts to solve problems. This shows the importance of epistemology, or the different ways of knowing, which are used to approach theological and scientific questions.

Best Practices

It is hoped that this communication will help readers to effectively introduce science and faith education in their churches.¹⁷ It is beyond the scope of this paper to provide an entire curriculum for teaching science and faith to youth. A five-part course for high school students, created by Denis Lamoureux, is available online.¹⁸ *Toward a Christian View of a Scientific World: Fifteen Topics for Study* by George Murphy could be used in Christian education in the church.¹⁹ The organizations BioLogos (www.biologos.org) and the American Scientific Affiliation (www.asa3.org) also have many good resources.

Some of the practices gleaned from the experience of teaching science and faith to youth, and from the literature, include the following:

- Respect church leaders and secure their support when introducing potentially controversial topics to young people, such as science and faith.
- Inform the parents in advance of the course about what is being taught, in order to minimize controversy and promote multigenerational learning.

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- Create a safe learning atmosphere that is open to everyone's opinions, as these are very personal and sensitive issues.
- Seventeen- and eighteen-year-old students need to be pushed out of their comfort zone, as they are rapidly approaching living and learning independently of their parents.
- Students are readier to expand their understanding of science and scientists than they are beliefs about the Bible.
- Convictions about science and faith are formed over decades, not weeks. Therefore, have realistic expectations about the magnitude of the change that can occur in just six weeks. Affirm all evidence of growth, including growth in humility. Sufficient time is needed for these issues to sink in.
- Learning begins with the learner's present knowledge and views, and not with the teacher's. Begin teaching at the place where most of the students are starting from.
- Scientists need to be cautious when passing judgment on creation doctrines, and theologians should be similarly cautious when evaluating the scientific theory of evolution. Humility is needed on both sides.
- Different disciplines lean on different epistemologies—empirical, personal, ethical, and other—which should be considered when teaching topics relating to science and faith. The way of knowing in science is largely materialistic, while the way of knowing in theology is largely based on history and spiritual truths.
- Teaching youth is as much an activity in pastoral care as it is an intellectual activity. Strive to shepherd their hearts as much as you seek to educate their minds.

Conclusion

This church with a strong young earth creationist bent was open to revisiting interpretations of Genesis 1–3 and discussing scientific evidence about human origins from a biblical perspective. However, this should be done with the support of the church leadership, and with sensitivity to the prior experience of the participants. High school students' beliefs about the early chapters of Genesis and the relation-

ship between science and faith can be influenced through methodical teaching on the subject. Readers are encouraged to put the warfare metaphor aside and engage with sincere Christians of different persuasions to grow a shared understanding of science and faith issues, and to better prepare young people to embrace and hold on to the faith in an informed way. ☀

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Notes

¹Answers in Genesis Catalog (2018), accessed January 4, 2019, <https://answersingenesis.org/store/product/gods-design-science-curriculum-2016/?sku=13-1-071>.

²J. Stump, "Why Are There Still So Many Creationists in America?" *Christianity Today* (June 19, 2017), <https://www.christiantoday.com/article/why-are-there-still-so-many-creationists-in-america/110061.htm>.

³D. Kinnaman, *You Lost Me: Why Young Christians Are Leaving Church ... And Rethinking Faith* (Grand Rapids, MI: Baker Books, 2011); L. Carlin and S. Coleman, eds., *The Cultures of Creationism: Anti-Evolutionism in English-Speaking Countries* (Burlington, VT: Ashgate Publishing, 2004); and J. Evans, "The Growing Social and Moral Conflict between Conservative Protestantism and Science," *Journal for the Scientific Study of Religion* 52, no. 2 (2013): 368–85.

⁴Carl F. H. Henry Center for Theological Understanding, The Creation Project, Trinity International University, Deerfield, IL, accessed January 4, 2019, <http://henrycenter.tiu.edu/evangelical-theology-and-the-doctrine-of-creation/>.

⁵C. J. Collins, *Genesis 1–4: A Linguistic, Literary and Theological Commentary* (Phillipsburg, NJ: P&R Publishing, 2005); EFCA Heritage Committee, *Evangelical Convictions: A Theological Exposition of the Statement of Faith of the Evangelical Free Church of America* (Minneapolis, MN: Free Church Publications, 2011); K. Appleton and J. B. Stump, eds., *How I Changed My Mind about Evolution: Evangelicals Reflect on Faith and Science* (Downers Grove, IL: IVP Academic, 2016); and National Association of Evangelicals, *When God and Science Meet* (Washington, DC: National Association of Evangelicals, 2015).

⁶M. Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago, IL: University of Chicago Press, 1962).

⁷Francis Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2006); I. G. Barbour, *Religion and Science: Historical and Contemporary Issues* (New York: HarperCollins Publishers, 1997); and T. Wilson, "Ten Theses on Creation and Evolution That (Most) Evangelicals Can Support: We Won't Achieve Perfect Unanimity on Every Contested Topic," *Christianity Today* (January 4, 2019).

- ⁸I. Hutchinson, "Science as a Christian Calling," in *When God and Science Meet*.
- ⁹C. F. Austerberry, "Teaching Evolution while Respecting Faith in a Creator," *Perspectives on Science and Christian Faith* 52, no. 3 (2000): 187–89; and April Maskiewicz Cordero, "The Joys and Challenges of Teaching Evolution to Christians—as a Christian," *BioLogos* (April 3, 2018), accessed January 4, 2019, <https://biologos.org/articles/the-joys-and-challenges-of-teaching-evolution-to-christians-as-a-christian>.
- ¹⁰E. A. Curry, "Do the Polls Show That Science Leads to Atheism?," *Perspectives on Science and Christian Faith* 65, no. 2 (2013): 75–78.
- ¹¹A. Plantinga, *Where the Conflict Really Lies: Science, Religion, and Naturalism* (New York: Oxford University Press, 2011).
- ¹²Applegate and Stump, eds., *How I Changed My Mind about Evolution*.
- ¹³Mario A. Russo, "4 Ways Pastors Can Shepherd Their Congregation through Discussions on Faith and Science," *BioLogos* (September 5, 2018), accessed January 5, 2019, <https://biologos.org/blogs/brad-kramer-the-evolving-evangelical/4-ways-pastors-can-shepherd-their-congregation-through-discussions-on-faith-and-science>.
- ¹⁴*Ibid.*
- ¹⁵A. Root, *Exploding Stars, Dead Dinosaurs, and Zombies: Youth Ministry in the Age of Science* (Minneapolis, MN: Fortress Press, 2018).
- ¹⁶D. R. Venema and S. McKnight, *Adam and the Genome: Reading Scripture after Genetic Science* (Grand Rapids, MI: Brazos Press, 2017); and C. J. Collins, *Genesis 1–4*.
- ¹⁷Russo, "4 Ways Pastors Can Shepherd Their Congregation through Discussions on Faith and Science."
- ¹⁸D. Lamoureux, High School Web Lectures, Lamoureux Homepage, University of Alberta, St. Joseph's College (January 10, 2015), accessed January 5, 2019, <https://sites.ualberta.ca/~dlamoure/wlhs.html>
- ¹⁹G. Murphy, *Toward a Christian View of a Scientific World: Fifteen Topics for Study* (Lima, OH: CSS Publishing, 2001).

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Call for Papers

RAISING FOOD FOR THOUGHT

We all depend on agriculture to provide our food. Further, agriculture is a major player in the quality of our water to drink and air to breath, the only two things we need even more immediately than food. What can the sciences and Christian faith tell us about how we should best raise and consume food? How should we proceed with GMOs, catching or farming fish, eating down or up the food chain, organic or factory farming, vegetarian, locavore, or omnivore ...?

Steven G. Hall (PhD, Cornell University) raises a gamut of such questions. As a professor in the Department of Biological and Agricultural Engineering and Director of the Marine Aquaculture Research Center at North Carolina State University, he is well prepared to lead us on this topic. He is past president of the Aquacultural Engineering Society, editor of the *Journal of Aquacultural Engineering*, and a Fellow of the American Scientific Affiliation.

In an essay accessible from both the ASA and CSCA websites, Hall invites consideration of critical technical and ethical aspects of the food system from production to distribution, from biological to environmental resources. Readers are encouraged to take up one of the insights or questions, or perhaps a related one that was not mentioned, and draft an article (typically about 5,000–8,000 words) that contributes to the conversation. These can be sent to Hall at shall5@ncsu.edu. He will send the best essays on to peer review, and we will select from those for publication in a theme issue of *Perspectives on Science and Christian Faith*.

The lead editorial in the December 2013 issue of *PSCF* outlines what the journal looks for in article contributions. For best consideration for inclusion in the theme issue, manuscripts should be received electronically before **January 31, 2020**.

Looking forward to your contributions,
James C. Peterson, *editor-in-chief*