Many of us have two things in common: we teach science and we are involved in Christian education. This combination can make for a wild ride, especially when the subject turns to one of the Three Big Issues We Worry About: Global Warming, The Age of the Earth, and Evolution.

Now personally, I do not really thrive on controversy, so I tend to keep my head down and talk about the great Common Ground we share in Christ and the wonders of creation that science has revealed to us. This works most of the time, but sometimes circumstances force us to step into the crossfire and engage on issues that are bound to make some people upset, no matter how we go about it.

This article is probably one of those times. As the years continue to roll by and Christians still struggle with the so-called “faith-science debate” (which I argue should not exist), the need for achieving closure takes on heightened urgency. And if we cannot achieve closure, then we should at least seek to honor Jesus’ prayer in John 17 by engaging one another and our students with respect.

There is a broad spectrum of opinion among Christians on these Three Big Issues. In this article I will put forward my own points of view. I have often addressed these issues in my books and at conferences where I speak, but have not yet summarized our positions in this newsletter. I will do my utmost to be respectful and open to dialog with my brothers and sisters in Christ who hold different points of view. I hope and pray that my readers will also grant me grace by reading thoughtfully, even when we disagree.

**Global Warming**

As I contemplated writing this section, I kept thinking that someone should just kill me now and put me out of my misery. The issue of climate change and global warming is one of the most controversial and highly politicized issues in all of the United States of America. This is just a small newsletter that tries to serve Christian schools with helpful information about science and math. Why in the world would I want to risk being skewered by wading into waters that have our media, legislatures, churches, and websites all balled up in knots?

The reason is simple: I believe God loves this world, which He made and pronounced good, and I also accept that we are in danger of messing up God’s world because our politics are interfering with our ability to think rationally about the science. And the science on climate change is as unequivocal and clear as it can possibly be.

To underscore the need for engagement on this topic, I would like to introduce you to my new and first grandchild, Theodore John Cook. His name means Gift of God/Yahweh is gracious/Person gifted at preparing delicious food. His parents call him Teddy, but I like to call him Theo. Theo is now nearly seven months old; the photo below was taken last summer when he was just over three months old. He is as happy and sweet and cute a baby as ever breathed the breath of life. Just look at those dimples!

Here is what Theo doesn’t yet know about: unless we humans dramatically reduce our carbon emissions very soon, the...
world Theo lives in when he is my age will be a very different place. Not only will global geography be completely different because of rising ocean levels, droughts and floods caused by changes in rainfall patterns will have resulted in massive numbers of people suffering and starving—particularly those of the world’s poor who are not equipped to deal with significant changes in rainfall patterns. If Theo knew that this was the direction the world was headed, I feel certain his cute smile would be replaced with this:

The political demographics on this issue guarantee that at least some of my readers—maybe many of them—remain unconvinced. For 20 years we have heard a continuous stream of messages claiming that scientists do not agree that global temperatures are rising, that even if they are it may be a natural cycle and not caused by humans, that 30,000 scientists signed a document stating that the science was erroneous, that we still aren’t sure about the science, and that since we aren’t sure about the science we should not take premature risk or drag down the economy. So since some readers are probably skeptical, I want briefly to offer a few points for consideration.

First, none of the claims in the paragraph above are correct: the science is not premature, and the consensus within the scientific community on this is nearly universal: 97% of the peer reviewed scientific papers agree that global warming is happening and that we are causing it, primarily with industrial and consumer CO₂ emissions.

Second, it is undoubtedly the case that many Christians are skeptical because they don’t trust the scientists. How do we know the scientists are telling us the truth? Well, if you are not fortunate enough to have close friends who are highly qualified scientists and whom you can trust (as I have), then perhaps you can trust fellow Christian believers who are qualified to speak on the subject.

Dr. Katherine Hayhoe is such a person. Dr. Hayhoe is an evangelical Christian and Associate Professor of Atmospheric Sciences at Texas Tech University. With her husband, Andrew Farley, she co-wrote the book A Climate for Change, published in 2009. I read the book last summer. It is brief (well under 200 pages) and very accessible. Dr. Hayhoe writes directly to the evangelical Christian community. Being an evangelical herself, she knows the evangelical landscape very well and she structured her book to address all the common objections of climate scientists. In her book, Dr. Hayhoe demonstrates conclusively that the science of climate change is legitimate and that we need to take serious action.

I first learned about Dr. Hayhoe by watching the short videos at this Nova Blogs link: http://www.pbs.org/wgbh/nova/blogs/secretlife/environmental-science/katharine-hayhoe/. She is very down-to-earth and plain spoken. I was struck by her remark that she is distressed that those in power have long targeted her community—Evangelicals—for disinformation on the issue. I had not thought about our situation that way before, but I believe she is correct.

If you have been a skeptic about climate change heretofore, then I urge you to read her book and allow it to help frame your thinking on this colossally important issue.

A big part of the reason people are skeptical about climate change is that the nature of science itself is widely misunderstood. In particular, people do not generally understand what scientific theories and scientific facts are and how they function in scientific discourse. Further, people often fail to situate climate data within the proper contexts of time scale and spatial scale.

I have written about the nature of scientific theories and facts in nearly every book I have published, and years ago I was delighted to discover that Dr. Keith Miller was saying exactly the same things in his articles and speeches. Dr. Miller is another scientist Christian—Research Assistant Professor of Geology at Kansas State University. In 2012, he published an article in the journal Perspectives on Science and Christian Faith (PSCF) that demonstrates how misunderstandings about theories, facts, and scales relate in particular to the skepticism about climate change. Dr. Miller quotes sources expressing many of the well-known objections to climate change science and carefully unpacks the misunderstandings they entail. You can download the article by going to this link, and clicking to download the PDF of the article by Keith Miller: http://www.asa3.org/ASA/PSCF/2012/PSCF12-12dyn.html.

If you are interested in more scholarly research produced by Christians researching in the sciences, you should see the December 2014 issue of Perspectives on Science and Christian Faith. This entire issue of PSCF is devoted to papers on environmental science. Each of the articles is informative and thought provoking, and the footnotes are a treasure trove of additional articles and recent books addressing the responsibilities of Christians with respect to the environment on our planetary home.

The threat of serious global consequences due to rising CO₂ levels is real. I believe the time has come for Christians to support action to protect the environment. And if the impact of climate change will be as devastating to the world’s poor as current models indicate, then climate change is a paramount issue of love and justice.

The Age of Earth

Compared to climate change, the issue of the age of the earth is not really much of a political issue, excepting a few school board court cases. But within American evangelicalism, the controversy over whether the earth is billions of years old or merely a few thousand years old continues to rage. For Young Earth Creationists, any old-earth view is a denial of the plain teaching...
Errata for Everyone

Thanks to those of our textbook customers who take the time to send us notes on errata!

We sure do wish our books were perfect. But as everyone knows, perfection is not something we are granted in this life. We are always grateful to receive emails from folks pointing out errors in our texts. When someone calls our attention to an error on an answer key, a mis-numbered list, or an explanation that is lacking, we always make the correction in our notes for future editions of the text. We also post all substantive errata in the online errata PDF file on our website.

The emails we receive about errors are often very encouraging. Many times we have thanked a correspondent for their comments and have received a reply along the lines of, “I am glad to be able to help. And by the way, I really love using this book!” It is truly a blessing to be working in an environment where your customers feel like they are part of your team and are eager to help you improve!

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We maintain a PDF on our website listing all known substantive errors. You will find it at http://novare-scienceandmath.com/extras/written-resources/errata/.

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All the errors we currently know about are listed in the errata PDF file mentioned above. If you believe you have found an error and it’s not on the list, please let us know!

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of Scripture and subverts biblical authority. Those who take the young-earth position often claim that everyone else brings assumptions to their reading of Genesis, and that these prior assumptions allow them (incorrectly, they maintain) to read Genesis in a way that allows for the earth to be old.

The fact is that Young Earth Creationists—like everyone else—bring their own assumptions to bear on interpreting Genesis. A big one is the assumption that the notion of the death of animals prior to the Fall is inconsistent with God calling his creation good, and inconsistent with other passages of Scripture (e.g., Romans 5:12). Perhaps an anecdote will help illuminate the erroneous nature of this assumption.

While cutting the grass one morning I observed some shuffling around in the thick vines that grow over our back fence. As I peered in closely, looking for a cat or a bird in the foliage, I caught a fleeting glimpse of a rat crawling up and over the fence. Of course, that unpleasant sight made my skin crawl a bit. But my next thought was that the presence of the rat explains the continuous presence of the owls I hear almost every night outside the window of my study, hoo-hooing to each other through the neighborhood trees in the darkness. My next thought was amazement at the visual acuity of those owls—an amazement that is just as strong now as a middle-aged adult as it was when I was a child. I never cease to get over the sheer awesomeness of an owl being able to discover and catch a small mouse or rat in the middle of the night. The owls are tens of feet up in the trees while the little rodents are hidden under grasses, vines, and shrubs. Yet the owls’ powers of visual perception in near total darkness, and their prowess at rapid flight while keeping track of their prey, assure of them a regular and tasty diet. I know it is a regular diet because the owls have been here since before we moved into our house 15 years ago.

Taking my thoughts about the owls a few steps further, I marvel at their absolute mastery of technique and their physical fitted-ness for their ecological niche. Now, why would the owls be endowed with such profound capabilities? In order to catch and eat mice, of course. But if, as some hold, no mammals died prior to the Fall, then the owls—like every other animal—must have been vegetarians. But why then would they have been endowed with powers that leave observers stunned with amazement? Are we to assume that a few thousand years ago owls suddenly developed incomprehensible night vision, death dealing talons, and the talon-eye-wing coordination that allows them to track—while flying and darting at high speed—hidden mice in the dark? Is it not rather the case that the owls display the glory of God and the excellence of his handiwork? God’s soliloquy in Job 39 does not include the owls, but it does include a mention of the grandeur of the eagles—a creature God clearly rejoices in—even though his young ones “feast on blood.” Significantly, God’s comments about his creative wisdom also include references to the horse, who, God proudly points out, is utterly unafraid of riding into battle, and the terrifying leviathan (whatever that is)—terrifying for the precise reason that a tangle with him means death. If God did not make these creatures as they are, why would he include such predators when he upbraided Job with the devastating interrogation, “Where were you when I made these?”? (And to digress just a bit, the inclusion of the comments about horses are particularly intriguing. Presumably, battles are the result of the Fall, and yet God delights in the qualities of a creature that seems to be custom made for the role. There is much food for thought here!)

I cannot continue this line of inquiry here. The whole point of my long story about owls is that God’s vision of what constitutes a well-ordered, good creation might be different from our own very culturally conditioned views about predation and the deaths of animals.

On the issue of faithfully reading the Bible, it is very significant that we have been in this position before vis à vis the Bible and the claims of science. Galileo begged the church authorities of his day to peer through his telescope and see for themselves the craters on the moon and the moons around Jupiter. The existence of these demonstrated that the Aristotelian/Ptolemaic understanding of the heavens that the Church had adopted—and claimed as biblical—was incorrect. As all the world knows, Galileo was tried for heresy, but within a few years the science behind Copernicus’ heliocentric understanding of the solar system was undeniable and the old geocentric model was abandoned by everyone—including the expositors of Scripture who had fervently maintained that a motionless earth was the only view of nature that was consistent with the Word of God.

The point of that story is that the theologians of the 16th and 17th centuries were just as sure of their reading of Scripture as
the Young Earth Creationists are of theirs
today, but their interpretations of Scripture
were incorrect. There was no way to know
they were reading God’s Word incorrectly
until the study of God’s Works revealed it.
The same is the case with the age of the
earth issue. The evidence that the earth is
very old was already overwhelming 200
years ago. Today, it is simply undeniable,
and the message for us is that we have to
sharpen our hermeneutical tools accord-
ingly and go back to the Scriptures to learn
how to read God’s Word more adequately.

When it comes to reading Genesis, one
of the discussion points is whether the text
of Genesis 1 requires the reader to believe
that the earth is young. Obviously, I have
been persuaded that it does not. But since
my brother Jeffrey is a lot more qualified to
speak on that than I am (he holds a Masters
of Divinity degree from Covenant Theolog-
ical Seminary and has been thinking about
this question for decades), I have asked him
to unpack it in our next issue in an article
titled, “Does Genesis 1 Demand Belief in
a Young Earth?”

To conclude this section, I will just
mention again some of my favorite books
on the subject. A fine, short introductory
treatment is Seven Days that Divide the
World, by John Lennox. For a comprehen-
sive treatment by two Christian geologists,
read The Bible, Rocks and Time, by Davis
Young and Ralph Stearley.

Evolution

Evolution is, of course, the mother of all
faith-science controversies. I cannot tell you
how many books and articles I have read on
the subject, from every imaginable point of
view. Those who have read my book Teach-
ing Science so that Students Learn Science
will already be familiar with my basic posi-
tion as a teacher on this topic, to wit: this
is not the time for dogmatic indoctrination
from one point of view. Both the science
and the theology continue to develop, with
scores of important new studies and books
each year. Our primary goal for now should
be to teach our students how to think criti-
cally about the issue, and this involves help-
ing them to understand the labyrinth of
issues involved, the different positions held
by sincere believers on the issues, and the
justifications for these positions. With this
background, students will be equipped to
study the issues themselves according to
their interests and opportunities, and
they will know that there are committed
Christians all across the spectrum. Unlike
the first two topics I have addressed in this
article, I do not teach a fixed position on
evolution, other than to say that to the ex-
tent it happened God directed the process
to accomplish his holy will for creation,
including the human race. To me, many parts
of the theory seem compelling, while other
parts seem woefully inadequate. I just con-
tinue to study, learn, and discuss.

What I want our students to under-
stand is that those looking for a safe place
go to get away from this controversy will
search in vain: major unanswered ques-
tions are before us regardless which way
we turn. Those who wish to stick with the
mainstream evangelical view on the sub-
ject—that the human race did not evolve
from other species—must turn a deaf ear to
a mountain of scientific evidence support-
ing evolutionary theory, evidence accepted
as persuasive by many practicing scientists
who are themselves Christians (e.g., Francis Collins, Deb Haarsma, Kenneth Miller,
Keith Miller, and many others). On the oth-
er hand, those who accept even the broad
outlines of evolutionary theory have tough
work ahead of them as they consider the
implications for the central Christian doc-
trines pertaining to sin, Fall, and redemp-
tion, not to mention God’s wondrous state-
ment about “making man in our image,”
treasured by believers since the revelation
of Scripture itself. Today, there is no easy
path through the issue where the science
and theology all make sense.

There is a peculiar characteristic of this
conversation that I cannot remember see-
ing to this degree in any other context: con-
tributors in each camp look at those in the
other camps and say, “You just don’t get it.
You are naïve and superficial, and you have
misunderstood everything.” Just this week I
have read two books and four book reviews
by writers contesting evolution or advocating
evolution, and statements like these ap-
ppeared in each of them.

I am just a science teacher. I am not a
biologist, geologist, paleontologist, anthro-
pologist, theologian, or philosopher. So
what are ordinary folks like us supposed
to do while experts with decades of highly
advanced and specialized training debate
about the correct ways to interpret the
data? Most of us probably have our own
hunches about the way this thing is going
to go. For many of us, our hunches get revised
periodically based of what we have read
and whom we have talked to recently.

Meanwhile, classroom teachers often
retreat to saying, “Just tell me what I am
supposed to teach my students,” and school
board members roll in and respond with,
“You bet we will—just say no!” Such an
educational environment is neither healthy
nor constructive.

I believe we all should carry on with
our work without feeling like we need to
know everything. It is okay to say that there
are a lot of things we don’t know; such has it
always been. Living with uncertainty is part
of life; even Our Lord experienced it (Mat-
thew 24:36). As teachers, our job is not to
throw fuel on the fires of controversy, nor
is it to try to shield our students from par-
ticular points of view, nor is it to pretend
that the issue is actually quite simple and
that only a heretic or ignoramus would be-
lieve the claims of the other side. Our role
is to teach our students how faithfully to
navigate the conversation by becoming in-
formed and asking good questions.

My brother and I are now beginning
work on a book to help foster classroom dis-
cussion. Our working title is, Teachers and
Students Talking About Evolution. Our goal
for the book is to write a study guide that
will help frame the scientific and biblical is-
sues and provide questions and suggestions
to propel a solid classroom discussion. The
book will not be a textbook on evolution-
ary biology or evolutionary psychology. It
will simply be a guide to help students learn
how to learn. It will be a year or two before
the book is out. If you are interested, stay
tuned.