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Why Science and Faith Need Each Other: Eight Shared Values that Move Us Beyond Fear | Elaine Ecklund

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The Veritas Forum

From the Veritas Forum at Arizona State comes a series titled Pursuing Science and Christian Faith for Human Flourishing. Professor Elaine Howard Ecklund from Rice University presents Why Science and Faith Need Each Other. • Please like, share, subscribe to, and review this podcast.

Transcript

Welcome to the Veritas Forum. This is the Veritas Forum Podcast. A place where ideas and beliefs converge.

What I'm really going to be watching is which one have the resources in their worldview to be tolerant, respectful and humble to the people they disagree with. How do we know whether the lives that we're living are meaningful? If energy, light, gravity and consciousness are a mystery, don't be surprised if you're going to get an element of this in God. Today we hear from Professor of Sociology and the Director of the Religion and Public Life Program at Rice University, Elaine Ecklund, as she discusses why science and faith need each other.

Eight shared values that move us beyond fear from the Veritas Forum at Arizona State University. I am a professor of sociology at Rice University where I also direct the Religion and Public Life program and for the past 15 years I've been studying what scientists think about religion and what religious people think about science. As part of that work I've surveyed nearly 26,000 scientists and done nearly a thousand in-depth interviews with them in their labs and their offices and I've also surveyed more than 30,000 members of the American public including people who consider themselves Christians, people who consider themselves Muslims, those from many other traditions, as well as those who have no religion at all.

I want to give a big shout out to the gifted team that I work with and lead at Rice University through the Religion and Public Life program. But unlike our other work which

is really geared towards academic audiences and broader publics, I wrote why science and faith need each other specifically for the Christian community, a community that I am a part of. Here is the first key insight of my work that I want to tell you about science and faith.

It's this, when it comes to science and faith there is a fine line between fear and anger. Here's my own story of fear. When my daughter was about three years old I was picking her up from daycare.

That day I was tired and I was parenting solo. I know some of these on this call identify. She begged to stay a few minutes to play with her friends and I acquiesced.

They started a game of hide-and-seek which kids often do at that age and I turned away just for a minute to talk with another parent. The daylight was starting to fade, it was towards the end of the day and I expected of course that at any minute she would kind of sittle up to me and wrap her arms around my leg. But after a few minutes when that did happen I started to look around.

It's time to go I called out. There wasn't any response. One by one the parents and children they got into their cars and they drove away and I called out again.

I really mean it, it's time to go. Still nothing. I pipped up my bag and I walked over to where she and her friends had been playing but I didn't see anyone.

Where are you? My heart started to race and I started to get that physical, that very physical manifestation of panic that we get. I checked up and down the street. I opened, I actually opened the doors of parked cars to look inside them because I thought maybe she'd crawled into one.

Actually a guy came out of his apartment and said, "Miam are you trying to break into my car?" and I didn't answer him. I had a singular mission. I actually had tears streaming down my face at that point and I commissioned this stranger in the search.

It had been about 10 minutes and by then several parents, the director of the daycare center, were also searching. The director actually pulled me aside at that moment and said she had activated the safety protocol for a missing child. And in that moment I truly believed I might not find my daughter.

And I'm gonna tell you that I felt fear like I have never felt fear before. And then I felt a familiar touch on my leg. Mommy, have I been bad? Well I have my TV taken away tonight.

I grabbed my daughter up and I hugged her so tight that she actually asked me to loosen my grip. And even now many years later as I'm telling you this story, my skin is sort of like tingling right now actually. And I felt this kind of intense relief like I haven't felt

before.

Then at that point I noticed a little boy standing beside her. He told us he had actually heard her breathing and her giggle as he came near. And well I mean I think you're getting where I'm going with this.

The bottom line is this that the entire time I was searching. She had actually been hiding within 10 feet of me. She had heard me.

She'd heard the associate director. She'd heard the parent who was helping me search and the other people are in the search. All of us calling and yet she chosen not to answer.

I let her down on the sidewalk and then and I'm sure now that I have your attention that I grabbed her arm and I looked into her face and I yelled I am so angry I want to give you such a spanking. She starts sobbing and the boy starts sobbing too. The director of the daycare, the one who had called the safety protocol, she actually touched my arm at that point and I don't I guess she maybe she didn't want to witness what was going to happen next but she said let's take a step back.

There is a fine line between fear and anger. There's a fine line between fear and anger. Over the years I have brought this lesson to my academic work on how religious people view science and particularly how Christians a community that I'm very concerned about and part of how Christians view science and scientists and how scientists view religion and religious people.

Fear can often masquerade as anger leading to conflict and when we see conflict between faith and science we need to get curious we need to examine whether there might be underlying fear and we need to try to understand that fear and so take a pause just a minute with me and ask yourself and and get that piece of paper that I asked you to get out. Ask yourself when it comes to connecting science and faith science and religion what are you afraid of? What are you afraid of? And now write down your answer. A little inner loot.

Here's what I as a sociologist bring to the table of discussion on science and faith. Sociologists like me are interested in in group behaviors. We're interested in how groups have an impact on individuals and how groups can bring changes to society.

One way we study this is by listening to people's life stories and analyzing to what extent these stories represent the groups individuals are part of. Sociological data of the type that I and other sociologists collect allows us to get past the loud combative voices that often drive public debate and gain a more nuanced and accurate picture of what people think and value and believe. Sociology has different tools than other kinds of disciplines.

It doesn't have the same tools of philosophy or theology. It can't really tell us the right

way to live as people but if we know how we want our communities or our churches or our laboratories to be different then sociology can help us change group cultures and engage in practices that help us affect change. And when it comes to examining science and faith sociology provides a key insight.

Science and religion are not just sets of ideas or thought systems although they are indeed these things. Science and religion are also communities of people. Communities like laboratories and churches and universities and denominations and some people of course are part of both of these communities.

Here's another insight science and faith share core values and virtues that could bring these communities together to work for the common good. And I want to argue and really claim tonight that that that common good has never been more needed than it is right now. We are in the midst of a global push to address the pandemic medically and to heal its collateral damage that will require the best that religious and scientific communities have to offer and that will require these communities working at top capacity together.

Science is bringing us the medical knowledge that we need to address this pandemic and religious organizations are going to need to be a key part of applying these medical insights as well as healing the collateral damage of the pandemic. I want to turn now to discussing four values out of the eight discussed in my book. Values that I think lead us beyond fear to collaboration.

Values that I think are really important in these times. The first value is curiosity. I'm going to tell you another story.

You realize I'm kind of a storyteller. I love to tell a story. You remember some conversations really for the rest of your life.

I interviewed Jill as I call her. This is a pseudonym for my first study of how scientists view religions quite a while ago now. She was already at the top of her field.

She was a biologist leading a successful laboratory at an elite research university. She's one of the only women in her institution at her level and one of the less than 10% of women in her field of science at her level. As I walked toward her office I noticed her door had a sign of the Darwin fish eating the Christian fish, the ikthu symbol.

I was conducting at that point my first study on scientists attitudes towards faith and the sign actually made me nervous. As I knocked I actually knocked a little tentatively and I started to think maybe it would be okay if Jill had forgotten the appointment for her interview actually but she did come to the door right away. She didn't do anything to put me at ease.

She didn't greet me with a handshake or a smile. She did and just asked me to sit in the

metal chair that was across from her desk. She told me she had nothing to say about science and faith.

She was just participating in my study out of courtesy because she supported social scientific research. I remember kind of wondering if the air conditioning in the office was on full blaster if I just felt kind of cold. My first question to Jill was if she practiced a religion or considered herself a person of faith.

No, she replied. I'm simply an atheist. I then asked her whether she'd been raised in a faith tradition.

This was the type of question that you could have answered with yes or no. I was really taken aback when Jill looked away from me and her eyes began to fill with tears. In the years since then I have interviewed nearly a thousand scientists face-to-face about what they think about faith and religion and still Jill is the only one who has cried.

As her tears welled up my own feelings really changed and turned from a sense of apprehension to a sense of compassion. I also became curious about why the question about her faith background elicited such emotion. Jill told me that she came from a Christian family and as a child had spent a lot of time at church.

She was raised in a rural community and she also spent a lot of time outdoors and she began to see the beauty and nature and to develop a real love of the natural world. She spent a lot of time in her schoolwork too. She loved her biology and her chemistry classes.

She said she was a total geek and that she got fantabulous grades but as she became more curious about the natural world she also became concerned about aspects of her faith. She brought questions about the origin and development of life on earth and the role of God in creation to her parents and her pastors. At that point Jill didn't know that she would go into science.

She was simply an inquisitive kid. She was she was following and feeding her natural curiosity but she said that when I asked hard questions of the faith I was I was told by my pastors and my youth group leaders just to make a decision to believe to forget about science. She said that answer didn't satisfy Jill.

She tried several times again with her youth group leaders to ask them hard questions that science had brought to mind but her experiences with them were similar. She was consistently told not to explore so much. She said I feel like religion was a mechanism that was really used to pass judgment on people who are different and she felt like I was so different because I was so inquisitive and and I didn't know that other people were inquisitive as well.

And she said and for me and my personal history and my childhood it was a kind of

judgment that didn't work out so well for me and by the time she was in her teens Jill had left her church community. Sometimes even now though she's still curious about faith. What is it? She said that keeps people from believing.

I feel like when religion works you you get a real sense of community she said but when it doesn't work she said you get judgment that shuts down curiosity. How do we nurture curiosity in church communities and in scientific communities and as an antidote to fear? As a character trait trait the philosopher Elias Baumgarten writes curiosity is a disposition to want to know more to learn about a variety of things. Curiosity is at the core of what motivates a lot of scientists to do their work.

The more we have this character trait the more often the more intensely we want to explore. We have a desire to urge to learn to investigate but in our current culture the word curious can seem kind of small and weak. It brings to mind a child wandering around the corner and wondering before they take a look.

Our culture seems to prefer stronger words like expert or leader or winner but we need to value more highly in our society the ability to ask questions that help us better understand ourselves and others that help us lead better lives. Let's ask different questions together. Let's get curious and let curiosity replace our anger and our fear of one another.

Let's ask why. Curiosity I think is actually a show of strength a yearning to push the boundaries of knowledge. Scientists like Jill are often known for the curiosity.

For example the the string theorist Sylvester James Gates Jr. who was the first black American to have an endowed chair in physics at a major research university and who's currently the president of the American Physical Society sometimes speaks about the relationship between science and faith and and Gates says he got used to being curious to asking hard questions at a really young age and he said that his family and his dad in particular really nurtured that sense of curiosity and I want to see us be concerned about this those of us who have responsibility for raising children. He said to of his dad he said to his dad dad do you remember me asking as a kid all kinds of questions and and my dad said to me yes I I do and and I said you always seem like you had an answer for everything dad and dad said I didn't actually I just say keep asking questions what you don't remember son is if I didn't have an answer immediately I would I would tell you to hold off and I would go and get a resource or I would read something and I would come back and answer your question but I didn't want you to stop asking questions even though no one in Gates's family was a scientist they had created an environment that nurtured a deep sense of curiosity in him. My research shows that Christians are often curious about the relationship between science and faith and how they can integrate science with their faith.

This curiosity can be painful and stressful sometimes but I think Christian communities

can become safe places for the curious especially those who are curious about science and faith. The most valuable resource in the Christian community is perhaps a relational resource it's those who have the personal experience and accomplishment the fellow Christians who have already successfully integrated science and faith some of them who are even living a scientific life out of their faith. From these Christians we can learn new ways of looking at the relationship between science and faith and have a sense of curiosity for science actually that's supported within our church communities.

I want churches to become places that offer the kind of reward of nurturing and satisfying curiosity about science. Take a second pause if you would with me. Look at that list of fears you wrote down and ask yourself how can you become curious about what is behind those fears? How can you become curious about what is behind those fears? And write that down.

The second shared value I'm going to talk about tonight is humility. I have been humbled a lot and I bet a lot of you have been really humbled in these last months as well. Here's one way I've been humbled through my research as a social scientist.

If you'd asked me when I first started my research whether there are many ways of being a religious scientist, I who was trained initially as a sociologist of religion would have said there are tons of varieties of religious expression. Of course there are many ways of being religious and being a scientist. But if you ask me if there were many ways of being an atheist scientist I probably would have said at that point about 15 years ago, not really.

Being an atheist is kind of modal. You just don't believe in God. Simple as that.

I was super sure I was right. But as a sociologist I've learned to doubt my assumptions, especially the assumptions I have about characteristics of groups. And my studies of scientists over the past 15 years have shown me that there are actually varieties of atheism among scientists.

That's just one of the ways that my research has humbled and changed my previous thinking about a topic. I've actually gotten so interested in the varieties of atheism among scientists that my colleague David Johnson and I are actually writing a book on that topic. Humility is recognizing the limitations of our own understandings and abilities and perspectives.

From a Christian standpoint, humility at its core is being very deeply aware that we are not God. Sometimes this happens the hard way. Another story from my own life.

Sometimes you think you're going to conquer time for example. And what you wind up with is a big purple toe that conquers you. Wait for it just a minute and you'll know what I mean.

A few years ago, I can't believe I'm saying this out loud in front of dozens of people, but a few years ago I had a foot problem in the form of an ingrown toenail, an ingrown toenail. While embarrassing to say out loud, it does not sound like that big of a deal. But by the time I had admitted how much pain I was in, I was seated in my doctor's office, my toe was totally swollen.

The podiatrist walked in, took one look at the toe and announced that it was completely infected and that I would actually need minor surgery. He told me that I was totally in luck because he could fit me right in that day. You need some background here to fully understand the story.

So for a long time, I've actually been quite afraid of hospitals. I'm also afraid of needles and blood. But when a doctor tells you you're in trouble that you have a serious problem and require even a minor surgery, you have humility.

You listen. I have a PhD in one field, but I'm not a medical doctor and I have a lot of humility about my medical knowledge. I don't have as much humility about my time limitations.

After the minor surgery, the doctor told me this. He said, you know, just take the rest of the day off. Go home, put your foot up, watch some TV.

I said, sure, I'll totally do that. What I didn't tell him was that I actually planned to go ahead with several hours of afternoon meetings. I thought, I'll be sitting in those meetings.

It's the same as putting your foot up, right? Kind of. One was the main university leader. I was going to let a minor surgery stop me.

I actually walked out the door with a slight limp because remember to have surgery, they had to numb up the foot. I didn't actually even feel it when my foot banged right into the exit door. I looked down to see that my beige bandage actually had turned completely red with blood.

I turned around. I went back into the doctor's office to ask for help. Unfortunately, though, the office had actually run out of beige bandages and all they had left was bright purple.

This time, the nurse wrapped it around my foot so many times it was so large that it was a very clear reminder that I had to take care of it, take it slow, take time to rest. Sometimes there are signs of the need to practice humility about what we know, but also our capacities, our physical capacities, what we can do. Big purple signs, for example.

Christians ought to be familiar with the theological idea of humility. As Christians, our faith reminds us in a very deep sense that we, that God is God and we are not, that God

is God and we are not. And that full truth can never be known because of our human limitations and our limited ability to know the mind of God.

It's not that there is no truth, but as human beings, we don't yet see things clearly as the pastor and theologian, Eugene Peterson, translates in the paraphrase of the Bible called the message. We're squinting in a fog. We're peering through a mist.

On this earth, we are all constrained by our limited human knowledge. Humility, especially intellectual humility, is a key scientific virtue. In a study of scientific virtues conducted by Robert Pennick, he found that humility to evidence defined as the willingness to abandon a preferred hypothesis when faced with conflicting results, was one of the 10 most widely held values of science as named by top scientists.

My studies have examined how scientists practice humility in their pursuit of understanding and truth. A few years ago, I read an article by the scientist, Amanda King, and in it, she described her experience when she was just starting out as a PhD student. And I think it shows us that what the practice of humility can look like in science if it's done well.

She said she was about two hours into a meeting where she was talking with those seated around on the table about her research work. When she stopped and she kind of had an awareness that she was only person in the room without at least one doctoral degree. I love those people have more than one PhD.

It's like, did you not have enough time on your hands? Good night. She writes, "But so why were they treating me with such unearned respect?" She goes on to credit humility. And she says, "Humility doesn't mean meekness, and humility does not mean unconditional deference.

Humility doesn't mean not standing up for what you believe in, including when you believe in your own scientific findings. Humility means being open to the possibility of being wrong, being willing to consider other people's ideas, and being respectful of your seniors, your peers, your subordinates. From my own studies and experiences in science, I've seen that intellectual humility and relational humility and body and kindness and respect for the ideas of others, no matter their status, go hand in hand.

When we recognize that we are limited in our own understandings and have abilities and perspectives, we then become humble and kind about the limitations of others. And we have a deep sense that we can learn something from every person." I've also noticed that practicing relational humility is not always easy for scientists, myself included. Science can be an extremely competitive environment.

It often seems to chew up and spit out individuals with little regard for human dignity, as one scientist told me. Scientists often work incredibly long hours, with no guarantee of

payoff in their scientific findings. And we often get so caught up in our careers that we forget the community of people that we are engaging with every day who deserve to be treated with respect because of their core humanity.

We can also become too concerned with institutional prestige and status and winning awards. Yet I've also found that scientists often practice relational humility in the workplace. Many of them, about 30% of university scientists I've interviewed who are Christians, have told me that caring for those they work with and mentor is extremely important for them as a part of working out their Christian faith.

They often view their co-workers and students as people who are created in the image of God and imbued with inherent value. One Christian biologist recounted how he tried to use humility to shift the organizational culture of his work environment. He wanted to make sure, he wanted to make sure that there was a greater awareness that science was more than just a set of ideas and methods.

It's more than a career for him, it's more than a method. He said it's also a community of people that Jesus loves. Another scientist explained how her moral commitments as a Christian influence how she treats others, regardless of their rank or background.

She explained as a Christian, I believe that people are equal and that everybody has the potential for good that makes them intrinsically valued. I want you to pause again and write down your answer to this question. How might you in your own domain of influence? I think sometimes we don't recognize our own power, all those that we have influence over in our own circles.

How might you and your own domain of influence practice true humility to address the divisions in our world that you see around you? How might you and your own domain of influence and your own relationships practice true humility to address the relational divisions you see around you? The third shared value between science and faith that I want to touch on briefly is healing. You should hear what they say about you, my daughter, she's a talkative one, said at the dinner table one night she was telling us that some kids have been actually picking on her about her parents. Do you want to know what they say about you daddy? My husband said he wasn't sure, but she persisted.

They say your dad has gray hair, is he your grandfather? We talked about this for a bit, my husband took it really well, but then she turned to me and she says that you should hear what they say about you mama. But what do they say I replied trying to sound kind of nonchalant while my heart was actually secretly racing at the thought of what might come next. They say your mom's hands look really weird, does she have something wrong with her? Her words actually brought a little bit of emotion and I started to tear up a little bit.

Because you see most days for the past 30 years I've experienced at least some pain in

my hands, a result of joint degeneration from rheumatoid arthritis. In high school there were times when I sat on my hands so that others wouldn't notice that they were turning blue at the slightest bit of cold. When I got married I wore long gloves because on that day I didn't want to think about my hands.

I've largely dealt with these emotions and now I very rarely feel like I need to hide my hands. But thinking of other kids teasing my daughter because of my hands kind of brought it home at another level. My hands have caused physical and emotional suffering though I know that my suffering while significant to me has been so small when compared with the suffering of so many others.

The reality that I've been made so deeply aware of in these pandemic times. And medicine and doctors have also been able to alleviate a lot of my suffering. When my daughter was three and I just started leading a big international research study my orthopedic surgeon told me that the cartilage in my hip joint had been completely worn away.

Every step I took with my then 38 year old body racked me with a pain. He looked at me and he said you must be suffering. I think I can get you in for surgery next week.

I asked him you know how am I going to be able to take care of a three-year-old while recovering from a hip replacement and how I will I continue leading my studies and doing my work. And he looked right back at me and he said with a pretty soft voice for a top level surgeon. I think I can help you with this.

Four weeks later I I ambled slowly behind a walker the kind you see used by 90 year old ladies in nursing homes and into my classroom to teach. Eight weeks later I sent my doctor a picture of me hiking in the hills of California. I have deep deep respect and gratitude for what I think many aptly call the wonders of modern medicine.

Without them rheumatoid patients like me would not be able to walk. My research shows that members of both the scientific community as well as Christian communities place high value on alleviating the suffering of others. They place high value on the virtue of healing.

About 40 percent of Americans say that they are very interested in new medical discoveries and that that number is even higher among those who are Christians. Suffering is a great mystery and human suffering is something that when it's in our power we should do so to alleviate one Christian professor of biology told me. He believes using his research to alleviate suffering is actually part of his calling as a scientist.

Another biologist who's also a Christian said that he sees scientific research a technology is actually a gift from God to intervene and to provide relief from suffering. Research has

shown that a lot of Christians appreciate medicine's ability to reduce physical suffering like mine. According to one national survey Christians and non-Christians actually differ little in their affirmation of medicine.

And a number of Christians I interviewed spoke positively about medical technologies as ways to alleviate suffering and offer healing to others. One Christian I interviewed said medicine is a gift from God and medicine was given to the doctors and the researchers to help people. "For us," he said, "it's just praise the Lord that doctors have been given the knowledge to be able to come up with things like that." A youth minister told me about cancer treatment technologies that his wife was using.

I too am so grateful as I said for science and medicine. I'm particularly grateful for a doctor Subaru, an Indian biochemist who developed a drug called methotrexate which was originally meant to treat cancer and that revolutionized how I felt during a flare-up of my disease in my early 20s about 10 years after my diagnosis. I can relate to Subaru's belief that science merely prolongs life but religion deepens it.

Words that were inscribed on a plaque near the entrance of an antibiotic manufacturing facility in Bombay dedicated in his honor. I'm grateful that God bought me Subaru and the rheumatologist who thought to prescribe the medicine to me in my life. I'm also grateful for advances in science and medicine that have reduced suffering, brought healing, and generally improved the lives of others.

I'm in agreement with the 85 percent of Christians I've surveyed who think that science and medicine bring good to the world. The fourth shared value is Shalom. Shalom is a Hebrew word that comes from a root that means completeness and perfection.

It is the peace, harmony, well-being, and prosperity that result from the flourishing of all creation. And I want to really acknowledge tonight that it is hard, hard, hard, to appreciate Shalom and these times. It's hard to realize it.

It's always been hard to realize it. We're just more deeply aware of that right now. Back when I could actually go to my workplace on campus rather than working from home as I have for the past year, I wrote the following.

I wrote the pressures of being a researcher in the social science include things like applying for grants, teaching, mentoring, committee work, writing, administrative work, program management, alongside the rest of my life, my parenting, my work in my church, the ordinary inundations of modern living make it really, really hard for me to get to stillness. And here's one way, here's one practice that I have one way that I try. After I drop my daughter off at school in the morning, I say a prayer.

I say this. The first part of my prayer is the rendition of a phrase from the Hebrew Bible in the Christian Old Testament from Assalm that says, "Be still and know that I am God."

I repeat that phrase, let me be still and know that you are God as I walk from my house to the university campus. I walk quickly as I pray.

Let me be still. Thoughts of what I need to get done in the work ahead and what I've left undone tend to inundate me. As I wait for the light in front of the campus to turn green, I stand on one foot in the other trying to get a few balance exercise in that my physical therapist told me to every day to do, I'm super easily distracted.

Let me be still. Once I'm on campus and through the beautiful entrance, I walk through a beautiful art installation which has a square in the top that's open to the sky and I stop there and look. Let me know that I'm fully loved by God.

I pray this piece of the prayer because I often feel that there are so many people to impress as part of my work. There are colleagues and students and funders and reviewers just to name a few and the culture of academic sciences, pressure field and competitive and cut throat and I often feel too limited. Let me know that I am fully loved.

The last part of my walk takes me up several flights of stairs to my office and on each of those stairs I try to say the phrase, let me enter into what you are already doing today. And I remind myself that I am participating in what God is already doing on my campus and in the world. In my interviews with scientists, I have found that many Christians feel similarly as I do about their work and their goals, sometimes drawing on the concepts of Shalom and stewardship.

Shalom though, I want to be clear, cannot be pretended into being. In its best sense, it means to get involved in the messiness of the world, to muck it up with the structures that are not just to make them more just. The theologian, Walter Bruggem, writes in the prophetic imagination, Jesus in his solidarity with the marginal ones is moved to compassion.

Compassion constitutes a radical form of criticism for it announces that the hurt is to be taken seriously, that the hurt is not to be accepted as normal and natural but is actually abnormal, unnatural and unacceptable condition for humanness. Thus, the compassion of Jesus is not to be understood just as a personal emotional reaction but as a public criticism in which he dares to act upon his concern against the entire numbness of the social context. Some of the Christian scientists I interviewed explicitly discussed increasing representation and equality in science as one of their goals and one of the ways they enter into Shalom through their work as scientists.

Some of these scientists specifically connect their faith to their efforts to increase opportunities for those who are underrepresented in science and this is an area about which as a sociologist I am particularly passionate. When we look at the US scientific workforce, we see that non-whites but especially black and Hispanic Americans are vastly underrepresented in science. For example, when we consider black Americans

who comprise about 13 to 14 percent of the US population, these folks make up just over 1 percent of all those in careers in science, medicine or technology.

Women of all racial and ethnic groups are underrepresented in much of science and medicine. Women of course make up a little more than 50 percent of the US population but represent far less than 10 percent of those scientific fields. And yet, black Americans, Hispanic Americans, Asian Americans and women are all over represented in our church communities and our Christian communities.

Nearly 80 percent of black Americans see themselves as committed Christians for example. One reason black and Hispanic Americans are underrepresented in science is that they are more likely to attend lower resource schools with poorer science education. A related problem is that Christians from underrepresented minority groups don't often hear about scientists who look like them or scientists who believe like them.

One Christian geneticist I met and interviewed was one of the few black women in her field in elite research university. She was the first woman and the first black American to become head of a large genetics program. During the five years she spent as a student she said that there was only one black speaker brought in for her department's weekly seminar.

For a lot of African American science is a no trespassing zone when black pastor I interviewed said. I do think it's helpful to have someone of your own color and your own faith be in science as Hispanic pastor told me because to see one of your own would give you such an inspiration. Representation matters and the lack of representation of women and minorities in science is an issue that ought to concern churches who care about science and faith.

Science needs more diversity and Christians have a responsibility to be concerned about that lack of diversity and the injustices that cause it as a part of seeking shalom. Those who have been and are most marginalized in our society are often those who care most about fighting on behalf of the marginalized. Fighting structures and engaging in efforts that demarginalize others.

We need to show folks that the science career can be used to care for people in the interest of justice, equality, and human flourishing. Churches I'd like to see more of you interested in ensuring that minority students have access to science resources and that minority voices are included in your dialogues about science and faith. If you look at the faith in science conversation in particular it's mainly white people, a biologist and one of my studies who is a person of color said.

In his view we need to engage the entire church in the United States on faith and science issues. How we engage on faith in science really doesn't help black churches and Hispanic churches and Asian churches and their experiences are different and they

might have different questions and so we should ask them and it's striking that sometimes there might be resistance to that. I want to end because I know my time is coming to a close.

I want to end with touching briefly on gratitude another important value for these times ironically and a way of addressing the fears that people have of each other right now. Through my studies and my own personal experiences I found that gratitude a deep true sense of gratitude is actually antithetical to fear and anger. Emotions some Christians feel towards some scientific findings and scientists and that some scientists feel towards religion and religious ideals.

One pastor said to me is that what's so unique in the African American church that I work in is that it is a theology rooted in gratitude rather than suspicion which is a very different posture for addressing life issues that come your way and it separates how you would approach science, how you would approach the illogical tradition, how you would approach theological questions. If you have a deep sense that God is good and you know the reality of accepting that God is good he said. You may not understand it but you're being okay and you're questioning and you're recognizing that God is good.

According to the writer Diana Butler Bass who's written a book on gratitude, gratitude is not about stuff. Gratitude is the response to the surprise of our very existence to sensing that inner light and realizing the astonishing sacred social and scientific events that brought each one of us into being that allows us to value each person that allows us to cry out like the poets of the Christian tradition to say I am fearfully and wonderfully made. Thank you so much just for your openness and your vulnerability.

Thank you for saying that. I always feel like I mean I've like written this stuff on paper and in books but it's still really different when you say it out loud. I really appreciate that.

Thank you. Thank you. Well and even even weirder I'm acutely aware so I also I have kids as well and my daughter was saying the other day she's 10 and and I want to be careful because every parent I will I hope every parent thinks their kid is brilliant.

She is our kid who we literally have to go oh how are we going to steward this? Because she asks questions and always has that are way beyond my capability. But she said you know mom God created us but is it possible that God also needed us to create things like Zoom because you couldn't even do your job at this point if Zoom didn't exist. And she is deeply deeply interested in science and art is the honest answer.

I listened to you when you said you walk through the beautiful arches at your school. And so do you have any kind of words of wisdom about how do we continue to encourage our our young people down to our little lists but all the way through to say what if we became fascinated with science and and and I also want to be careful because I've got some friends I know from school things and kid things and its parents

were like oh stay away from that. You know if you love Jesus you can't possibly do any of that and our kids are all in the same classes together.

Yeah and that's not quite what you have studied but because I know you have kids and because this is a group of scientists and I want them to be respected by the upcoming generation. So do you have any thoughts on that as we are now I'm seeing some questions coming in but we'll start there and then we'll get to the everybody else's. Yeah no I was I was actually really excited that you are a leader in thinking through the theology of youth ministry because I think that's incredibly important and we need a lot of people we need to get our best intellectual energy going into how we think about caring for our youth who are asking hard questions and so I one of the things that actually my research on scientists has shown me is that people tend to end up being scientists are super inquisitive as kids right.

Like you think about someone who ends up being a scientist at a research university a place like Arizona State a place like Princeton a place like Rice University where I work these are people who were bright to begin with right often and they had that stewarded well usually and so if they are in churches we need to provide as parents and youth leaders and pastors a real context where it's okay to ask hard questions to really bring your hardest questions to church and I think sadly and I get it I get it because I because my my child asked me questions sometimes that I'm really afraid of that when your kid asks you a question that you can't answer there there does result in a kind of it results in a kind of fear sometimes and and I get that we don't have to go it alone though there are lots of phenomenal resources in in American society at least I know there are folks on this on this in this session who are from different national context we often feel like we have to parent in a silo it's just like me and my kid and there's a community of people out there and there are some if you don't know the answer there's someone who does who can speak into your child's life in a really positive way and so to really help each other in that way I think is super important I think that's great my most humbling came after when we were able to go to the pool and my my daughter watched them do the the acid base test that they do at pools and she's super excited at the changing of colors and then she came home and she said you know mom all those diagrams when you see the bodies there's always blue and red for the blood so is our blood acid and base as well and I thought huh you're eight and I'm literally already tapping out of being able to be able to continue because here we have I often say that young people are natural theologians I think they're natural scientists as well because they're curious and so we have to continue to foster that and so I love this I'm looking at the questions off to the side so the first question really fits right in it says how can we help the body of Christ to embrace deep thinkers from a young age to encourage them to ask why without fear so can I can I jump in and offer a thought please please yeah my first thought on that honestly is we need to let youth pastors and church leaders be okay with saying oh gosh I don't know I studied theology I don't know you know after physics I don't always know

how to discuss quantum mechanics but I think it's important and so let's learn that together because I think what ends up happening and it taps into your conversation about fear instead we feel stupid you know scientists if you don't know this yellow smart you're like freakishly smart and so sometimes we feel stupid now I'm fortunate that I'm old enough now where I realize scientists know what scientists know um and they're very brilliant in their own area but they also have their own anxieties and insecurities outside of their fields and so if we were able to approach that we're back to your virtues the conversation about humility and curiosity but I think if we can invite both groups to be able to say I don't know but what would what an amazing thing if we could say but I know a scientist who might be able to have a better conversation with us can you wait a week I think that's a great idea and I also want to encourage churches to join together there are those of us who study churches know that sometimes they're pretty demographically similar sadly and so would there be space for churches to help each other out the churches that have scientists connect with churches that don't I think there's some real interesting synergies that that could take place here that's good um the next question it says Elaine it is a truism that science cannot move from an is to an ought science can tell us how to build a nuclear weapon edit a genome or safely abort a fetus but cannot it cannot tell us whether what conditions these actions are right or wrong in your experience our atheist scientists willing to admit this fact and if so what resources um I think it's supposed to say do they rely on to make such judgments yeah that's that's a really relevant question we're facing a lot right now in our society with the pandemic but also beyond where we have rapidly developing technology and science scientific technology develops much more rapidly than the ethical reflection about it does and that is a truism ethical reflection is extremely slow and needs to be more considered and many scientists both those who are persons of faith and those who are not are very concerned about this that there is not the kind of space that science needs to reflect ethically on how science ought to be used in society we've seen this recently with human reproductive genetic technologies of the sort that are a change generation that actually changed the gametes of people so that you are changing something for generations of a person and so you know that is illegal in most national contexts and we've had a lot of ethical discussion about that and many in the scientific community will say you know we need space to think through how to apply these technologies and so there's just that's a very very good question and you know keep going in your own thinking about that question because it's it's really the question of the day that's great thank you i can thank you every once in a while i teach at a christian university and so there's that obligatory worldview christian class that everybody has to take whether they're christians or not and i'll have students who will say well but i'm moral because i'm human and then we get to unpack this great conversation of what does it mean to be human and how do we understand that and why do you think being human qualifies you to make those kinds of choices around science and space and technology and cell phones and a whole host of things and so it always turns into this really great robust conversation your next question it says can you repeat the question you asked us

around using our influence i wrote it down if you want me to draw a screen i'm sure you are brilliant and your notes are right there but i know they are but i'm having um that was about 20 pages ago i just joking let me help you because i'm sure that you would say this is exactly what you said so let me just quote you you put how how might you in your own domain of influence practice true humility to address the relational divisions around you yes that was what i said thank you that could have possibly been worded more simply but i i didn't yeah you know i i there's a lot of pain and difficulty going on in our world um i know from recent national survey data that we are incredibly polarized right now and i can feel extremely overwhelmed by that um there are just no end of things i can do and so um or i ought to do and i also have very low energy and i'm a person who has a lot of resources so i can only imagine um the kind of pain and stress that folks are under who have even more demanding lives than i do and so um i've been trying to think lately um just what can i do in my own sphere of influence so um how can i um be humble in my interacting with others and and i don't mean um you know we don't say what we think or we're door mats what i mean is we have a posture of knowing that we don't know everything and that we can learn from any other human person that there's some just by i believe as a Christian that just by virtue of the fact that a person is walking around on this earth or or living and breathing on this earth that there is some goodness there that there is some positive goodness um that we can learn from and so if we sort of started with that posture just with the people who are in our own circle you don't have to go out and get new people um there is i think there's a lot to be done um towards if we can adopt that kind of posture i had a really unusual you know things that you can't set up kind of experiences this week i took my father to the oncologist um he's at stage four from agent orange oh god we're steeped in all kinds of things but we were at the oncologist today and i've gotten to know this this brilliant oncologist over the last several years and in the appointment for my dad i told him about this conference and he said oh that sounds fascinating he said you know i have a colleague who's one of my closest friends and he said we line up on all of our kind of philosophical approaches to treatment and management and what that looks like and he said about my friend thinks i'm a coward hmm he said what does that mean and he said well he thinks i'm a coward because i believe in god hmm and he said you're a theologian who comes in here and i i do i go in and i like listen i got nothing i don't understand all of the details of cancer and what's happening i can i can talk the talk at this point i'm really good at a lot of the the conversation so i sound like i know what i'm talking about but it's really parroting and advocating and so he knows that i admire him greatly but he said you think i have a lot of answers and he said but i'm curious do you think i'm a coward because i believe in god hmm and i thought what an interesting display of humility from he is the senior oncologist in a major practice here in the valley um and he's asking one of his patient's daughters what this is and i thought that was such an interesting interchange um as he is very much a scientist and he said you know i don't talk about god with most people and he said i just happen to know what you do for a living um and there i became this really really cool conversation that took place yeah i i do think that um for some of us

these times are are really um i i don't know exactly how to put it in the right way amy i say i like stripping away pretense um yeah there's something that it's just not worth it to fake it anymore um you know it's like if ever we were going to be real now is the time and so that is uh i think a lot of people i know are really feeling that way well so that leads us to our next question that was sent in says could you expand a bit on the virtue of humility from both sides of the issue in the eastern orthodox church we speak of the apophatic theology to describe that which is veiled in mystery beyond which we cannot speak authoritatively thank you that's what they wrote well that's really neat that's really neat i wouldn't want us to um go away from our discussion of humility um thinking that there's nothing we could should fight for that there is no truth i mean i think there's a way in which we can misunderstand humility um i i don't see humility as shutting down curiosity that's why i you know i sort of think about those two things together um often that but just there's the kind of a sense that there's always something that's greater than than we are and and that's i think just so important um to know during these times in which can counteract um things like hubris and anger um right now that if we just have a sort of deep sense that there's something greater than ourselves and that we don't know everything that there's always and that's the kind of excitement in that um there's always more to know and always more to learn um there's always more creative exploration i would say also that apophatic theology it invites us into a space of curiosity um that that idea of mystery that there are some things we either just do not yet know or perhaps never will know but man i'm gonna spend my life trying um and so yeah that's a beautiful a beautiful connection i think between faith and science is that there's still mystery the next question is how can christian scientists and educators foster the development of these virtues in the next generation of scientists and leaders particularly for christian educators and secular institutions it's hard and i um i talk a lot i did i couldn't really spell it out here in the confines of the the length of the talk but i i talk a lot in the broader book about the importance of practicing virtues and values in community i do not think these are things that can you can go it alone with that there um there is just a deep need to have um communities infused with virtue and to have things like humility and curiosity become habits and practices and habits are best in committed communities and and so i think that's where it's really helpful to see um you know science is not just a set of ideas but it's a community of people right that have certain kinds of predispositions and there are ways in which the faith communities and scientific communities can really help one another um and i don't i don't think we we start with that posture usually we also we usually think like how are these communities in tension um instead of imagining how could these communities be helpful to each other through a sense of shared virtue um i think that's really important i'm gonna riff off of that but but because i know you're a keen sociologist you'll be able to do this um in my field we talk often of the theological imagination hmm yeah the same conversation takes place certainly and and i teach sociology classes as well so i end up kind of double dipping um and i think i was even surprised as i started in sociology and did theology later in graduate school and and phd work but i was like oh oh we all use the word

imagination isn't that interesting but i wonder how we could invite those virtues into our different disciplines and so forgive me for those of you who are in disciplines i do not know um but i would imagine that there has to be a bit of imagination in almost every field and so i wonder if there's a way to tie the virtues in to that imaginative element of our of our disparate fields what do you think i i do so there's um you know virtues are are just like these empty words unless they're embodied unless they're practiced and so you know i start start thinking about like you know how can we subvert dominant power structures and get involved in the messiness of the world such that we are in a christian sense or a jewish sense imagining shalom or seeking the peace and goodness for the world that's a lofty ideal right so so what is that really mean in everyday academic life well in my own field of sociology even though we study inequality um we still practice inequality so for example if you go to an academic conference um people are actually looking at your name tag to figure out if you're from an institution um where it's worth talking to you right if you're from a powerful institution or less powerful institution so one thing i've talked to my students some about is um let's practice being circle white-in-ers so you know when people are standing in a conversation circle um it at an event and you know someone is kind of comes up from the back and people are like no i don't really want to talk to that person let's kind of close in so instead what if we take a step back and let the people in who are coming from the outside so what if we're circle white-in-ers well that's a that's a it's kind of easy um small way to begin um subverting power structures of any quality right that's a small practice and so you know could we imagine practices that might work in different kinds of settings so that's what we might do in our communities is say like we want our community to embody this virtue of humility and so what would be ways in which we might practice that together is this imagine together practices that would allow us to embody that virtue i think that's great i i also you know and i really sincerely meant it when i said i think you were the perfect person to set the tone for this conference i think i was like perhaps taking those virtues and so addressing that that question at a christian scientist and scientists and educators foster this development what if regardless of what your topic was if you started out with those virtues and you know we live in a weird world because sometimes some people i'm assuming are on here who have a more relegated curriculum and others have more freedom but if you get to be teaching students whether it's in the classroom or virtually we still get to foster those conversations and and what if there was that element of choosing each of these virtues and either covering them at the beginning and saying they these are going to be the ones through which we do our course or weaving them in throughout the semester or the quarter that's really neat that's really neat thank you okay so the next one it says do you have practical advice for navigating the divisive issues around the pandemic especially with regards to masking and vaccinating yeah i mean i really do think that the best medical science says that masking works and so you know but then how do you treat people who who differ there right or people who just you radically think are are wrong um you know there i think a christian virtue is what does it mean to treat people um humanely and to treat people well as if they're made in the

image of god um even if you radically disagree with them and and i think that's a really high order and it's hard to just gut that one out right because everything in our bodies moving trapped in our houses um or we've had to to go to work and feel like we're in danger i mean we're all living on edge and um the people that are um the most vulnerable in our society have been hurt the most by the pandemic um the deaths of black and brown people during these pandemic times are so much greater um than the deaths of white people and so there's a way in which you can start to feel angry for people towards people and so then to just take a breath and to think what does it mean um to treat everyone um with a sense of valuing their core humanity and and that's really hard i hope i'm not coming off as polyanna in any way i'm not saying that we can't disagree with people um that we can't uh try to get people to change but then what does it mean to do that where we have a core sense of valuing the humanity of everyone and that's that's where that's where real creative living needs to happen and i really love that we're talking you know Amy back and forth about this idea of having a sense of imagination um because it does take imaginative thinking to accomplish that it's very easy to have a knee jerk reaction that's what all of our guts want to do right now because it's been so hard because you're in Texas um have you seen any of the Facebook things by friendly neighbor epidemiologist? i i don't think i have maybe i don't know your time that so i have not asked and so i'm gonna just i i will ask forgiveness instead of permission um one of my former students who is now a pastor his wife is a PhD in epidemiology oh great um and so she's straight up an epidemiologist and when all of this came about people started asking her questions so she now has a Facebook page named friendly neighbor epidemiologist and i love that because essentially become her full-time job we keep laughing we're like are you still able to do your job and she is um she's a mom she's a pastor's wife and she's an epidemiologist but she goes through and she breaks down the science and because this is a conference on faith and science what she does is she she very and she's the nicest person like i think i'd be like what's your problem do it right she however it's like let me talk to you about what's actually happening and let's discuss your fears and your concerns um she's amazing that she talks about kind of that that interplay and so for any of you who are interested you don't have to agree with her but she has at least already done the hard work of researching and you can tell she's a true academic because she cites every post she has on Facebook i love that it's almost more like a read it's like a mini research paper all the time and i'm like you know no one can just face that yeah remember you were to say that they don't add citations on Facebook she has more power to her i love that i'm gonna start doing citations on Facebook she has an in these citations it's not by at the end of this we're like you really need i don't know that it'll be needed five years from now but like you've just written another dissertation okay i think if i want to say something quickly um i think even if you disagree with someone it's really worth knowing what's behind their fear um i think about um you know we have in in the u.s. had the tuskie gie syphilis trials where um you know black men were allowed to be infected with syphilis and experimented on at the hands of the government and so there is within

communities um a founded sense of distrust of some forms of medicine and medical technology and that's a different kind of fear than and it's a founded fear and so and it's something that's based in reality and based in truth and so so there's it's extremely important to know um you know what kind of fears people have and why they have those fears and i just think that's incredibly important and it's just a really important piece of moving forward in the science and faith dialogue and and just in relationships between scientific and medical communities yeah so your next question that says in your opinion how did the church that birthed inquiries on the natural world end up apparently in a place where there is some apprehension with the church about science yeah there are there's a lot of books that have been written about that um so um there's a great book actually um by a colleague of mine um Ronald Numbers at University of Wisconsin um his emeritus professor there now um called the creationists um which really takes you through um the history of the relationship between faith and science at least as it has to do with accounts of creation and and so it is true that you know most people don't really have a sense of the history of science where um Christianity um and as well as Islam and other religious traditions were very much a part of of birthing science where people really saw themselves um you know doing science and as some have said you know thinking God's thoughts after him so so i think there is a really neat thing in um knowing the history of just the importance of christian thinking and christian faith in the historical advancement of science and so that's it's not something we talk about enough but there's some great folks out there doing work in that area that's great thank you so we have two more questions that are already listed here i want to be mindful of time um i know for some of you it must be really late um but so let me get to the next one it says we talked about fear among christians concerning science and scientists but in your experience is there also a comparable amount of fear in the scientific community about faith and if so how can we deal with that fear in our conversations oh yes there definitely is um i've i've written some about that through um the book the why science and faith need each other is really a book that i've meant to be as accessible you'll have to decide whether you think it actually is but i've i've written it to be accessible to everyday christians to use like in a adult education class or something so it's very short and has discussion questions but but i've written a book um about i've written two books about the scientific community so one called science versus religion what scientists really think and one about scientist attitudes towards religion in eight national context which is called secularity and science what scientists around the world really think about religion and in both of those books our team collected a lot of data and there's a lot of fear that some in the scientific community have a religious people broadly not just christians and um fear um about how christian mistrust of scientists will affect funding for scientific research in the u.s. that is a huge fear um fear that um certain kinds of christian churches keep kids from being interested in science um these fears are somewhat founded and so to just recognize that when um some types of scientists say things um about christian churches or belittle or marginalized which i don't encourage i really actively argue against that but there is um sometimes

some very bad experiences um that these scientists have had um in their own youth and their own background with christian churches and there is some some well-founded fear of the way in which um mistrust of scientists is having an impact on scientific work i think this final question quite frankly might be my favorite but it's because my heart is always with adolescence and so it says do you have any practical advice for college students to help promote the idea of harmony between science and faith where there is a culture at universities of the two being opposites is it about christian science students having to be more outspoken about their faith or does there just need to be more dialogue in general? hmm that's a great question i agree with you Amy that's a really terrific question um so i would love if i could have my way um you know more what i call kind of boundary pioneers so those scientists who really cross what i think is an artificial boundary between science and faith where they're part of christian faith communities but they're also active scientists and i would like that to be a diverse set of people i would like there to be um scientists who are christians who are from different genders different racial locations different social class backgrounds different national contexts so that um college students could see very openly through its its lived practice um that these things do not have to be in conflict and they would have lots of different models for working that out so uh i i would love to see that happen and i think there's efforts of foot um to work in that direction some encouraging efforts um but it needs to be much much more and there also needs to be a real emphasis on a diversity of voices i think we could do a lot if you like this and you want to hear more like share review and subscribe to this podcast and from all of us here at the veritas forum thank you

(gentle music)

(buzzing)