

Marc Roby: Today's podcast is again a special session. It's the second part of an interview with Professor Henry Schaefer III. Professor Schaefer received his Bachelor of Science degree in Chemical Physics from MIT and his PhD in the same area from Stanford University. He is currently the Graham Perdue Professor of Chemistry and the Director of the Center for Computational Quantum Chemistry at the University of Georgia. He is also one of the world's most highly accomplished and regarded physical chemists. He has over 1600 publications and it has been reported that he has been nominated for a Nobel prize five times. He has won so many awards and has given so many talks all over the world that it would be silly to even begin to list them.

But the most important thing about Prof. Schaefer, is that he is a Bible-believing Christian and unashamedly speaks of Christ wherever he goes. Before we begin I would like to point out that Dr. Schaefer has written an excellent book called, *Science and Christianity: Conflict or Coherence?*, which is in its second edition. Dr. Spencer was able to interview Prof. Schaefer on Wednesday afternoon, October 3, 2018, prior to Schaefer giving his lecture at the University of California in Davis.

Dr. Spencer: This is Dr. Spencer, and I'm here with Professor Henry Schaefer and I welcome our listeners back for the second half of our interview. Professor Schaefer, have you had any particular discoveries or observations in your career that really bolstered your faith as a Christian?

Prof. Schaefer: Yeah, just one. We have been interested in the structures and properties of small molecules for a long time, going back to the work on CH₂, the methylene molecule, that made me a household word in a small number of households. But one of the most exciting molecules is Si₂H₂, which is a molecule which is similar in many ways to acetylene, which is a linear molecule, structure HCCH all in a line and we were able to show that Si₂H₂, the silicon analogy of acetylene, has many different structures, some of which are truly unique. And that was an aha moment, and it was of course very satisfying when experiments came back five or six years later and showed that all of our predictions of quantum mechanics were true.

Dr. Spencer: That's pretty amazing.

Prof. Schaefer: That was very gratifying.

Dr. Spencer: So, it shows Schrödinger's equation was right.

Prof. Schaefer: Schrödinger was right, yeah.

Dr. Spencer: Alrighty. I have a question that is sort of related to science, but not really directly really, in a sense, and that is, do you think that science is an objective discipline, at the end of the day. I mean, clearly individual scientists are not objective fully. They're observers and they bring their own worldview to the work that they're doing, so it affects the way they see the evidence and it affects the questions they might ask and so forth. But what about science collectively, when you think about the way it works with people trying to work, do build on what other people have done, and so forth? Do you think on the whole that it's an objective discipline?

Prof. Schaefer: Well, scientists have many failures. This is indisputable. The hope is that as time goes by, these failures will be corrected, and we'll get on a more clear path toward the truth. Sometimes this takes a long time, sometimes this takes a long time, and so, yeah. I mean, we hope science is self-correcting. I think that in the broadest sense it's true, but it sure takes a long time to get corrected sometimes.

Dr. Spencer: That's certainly true. Now you've been teaching a course at the University of Georgia on Science and Christianity, a freshman seminar kind of class. What do you find to be the most common misconception young people have about Christianity?

Prof. Schaefer: It's that science has disproved God.

Dr. Spencer: Alright, have they said why they think science has disproved God, or is this just a general idea that they have floating in their head?

Prof. Schaefer: We're about halfway through the semester now, and I asked the students on the first day of class, "How many have heard somebody say that science has disproved God?" They all raised their hands, all seventeen students, they all raised their hands.

Dr. Spencer: Interesting.

Prof. Schaefer: So, it's out there.

Dr. Spencer: But then can they explain that at all, if you asked them how or why?

Prof. Schaefer: Some teacher told me so. My parents told me so. I heard of a famous scientist who said this. That's the kind of answers you get.

Dr. Spencer: Alright, that's pretty amazing.

Prof. Schaefer: Most of them don't buy it, just for the record. They've heard it, but they don't buy it.

Dr. Spencer: Well, that's encouraging.

Prof. Schaefer: It is encouraging.

Dr. Spencer: And we know from Romans 1, that they're suppressing the truth anyway, so...

Prof. Schaefer: Yes.

Dr. Spencer: I have another question that's really off-base, but it is scientific in a sense. What do you think of the strong view of artificial intelligence? I don't know if you've read the book from the eighties, *Gödel, Escher, Bach* by Douglas Hofstadter or not, but the whole idea that if computers get sufficiently complicated and the software gets sufficiently sophisticated with enough layers of self-referential ability and everything that it will develop all of the characteristics of intelligent beings like you and me?

Prof. Schaefer: Yeah, a person in my field, Christopher Longuet-Higgins, went from quantum mechanics to artificial intelligence, and he made this most remarkable statement, that artificial

intelligence will never account for natural stupidity. There's nothing in artificial intelligence that hasn't been programmed by some human being, so it can only do what we tell it to do, so I'm not frightened by artificial intelligence. My whole life is using computers to solve equations, so no, I don't see that coming. I mean, artificial intelligence is okay. I mean, we find patterns, this is what artificial intelligence is all about, we find patterns in nature and sometimes, using the computer, they make sense a lot faster than just looking at, you know, if we could, billions and billions and billions of pieces of data. So it's useful, but it only does what it's been told.

Dr. Spencer: That's true. Do you have any thoughts or comments you'd like to share about the current climate on college campuses with regard to free speech? For example, you give talks all over the world about faith, and you were telling me a little bit earlier about some troubles you had years ago in India with a talk, so what do you think about the current climate, what needs to be done there, or...?

Prof. Schaefer: It varies from campus to campus. You know, at my campus, the University of Georgia, I think it's true that most anything goes, most anything can be said. That doesn't mean you won't run into a lot of controversy. There's a certain number of our students, and it's a small minority, who don't mind being, how shall I say this, violent. And this is sad when you see this, at my university or any other. And one hopes that universities would take a strong stand against this. The University of Chicago has taken a very strong stand against this, there are no safe spaces at the University of Chicago. If you don't want to be challenged in your ideas, please don't come. I wish more of our prominent universities would make statements like that.

Dr. Spencer: I agree. What do you think about the changes that have occurred over the last, well, even 150 years, in the definition of science. I mean, 150 years ago, theology was considered the queen of the sciences, and for most of the last 150 years the definition of science if you look in old dictionaries has something to do with some sort of a systematic way of looking for knowledge, but in the past 50 years a lot of prominent organizations for science education and so forth, I think in response to us learning a whole lot more about the nature of life and the complexity of life, have started to argue that the definition of science should include a limitation that you are looking for a natural cause for all events, or all things. What do you think? That seems to me to be damaging the very core of science.

Prof. Schaefer: Yeah, I don't agree with that, I think we need to follow the evidence wherever it leads. And sometimes it leads in the direction of a sovereign God of the universe. If you exclude that, your worldview is going to be incomplete, in my opinion.

Dr. Spencer: Um-hmm. The big bang theory, and the mass of evidence that has been gathered in the support of it, has convinced most scientists that this universe had a beginning, and it also supports the creation narrative in the Bible. Is there any specific finding in your field that you think points to the existence of God in a similarly compelling way?

Prof. Schaefer: Chemists are very impressed by the beauty of their molecules. Not all molecules have gorgeous symmetry, but many do, and even, I would say that in some cases, new discoveries of molecular structures, like C₆₀, buckyball, Buckminsterfullerene. When a lot of people saw that for the first time, it kind of took their breath away. So you know, something of

that beauty, and that was never known. When does chemistry begin, Robert Boyle, and wow, more than 500 years, and to see that somebody's made it, they can put it in a bottle, you can scratch it, you can rub it. You can't eat it. But for many chemists I think that was an inspiring experience, and it just naturally raises the question, how many other things like this are out there that we don't have a clue about? And that I think provides some motivation for people to try to keep making new things and understanding the things we already have.

Dr. Spencer: Well, mentioning Boyle is interesting too, because I've read a biography of him, and talk about an amazing Christian, I mean, the man taught himself biblical Hebrew and Greek, and if I remember right I think even Aramaic, so that he could read the entire Bible in the original languages.

Prof. Schaefer: Yeah, he was what we now call polymath.

Dr. Spencer: Yeah.

Prof. Schaefer: It's harder to be a polymath these days because there's an awful lot of knowledge out there to absorb, so I don't know if we're ever going to have another polymath. There's just too much...the range of things from high-energy physics to molecular biology is so huge that it's really pretty hard to know everything. Even in my own field of quantum chemistry things have changed so much. I used to read all the journals and I would say that I have to depend a lot more on my students to tell me what's important. There are still some really good ones that I read pretty much cover to cover, but for the others I depend on others to tell me what's really exciting out there.

Dr. Spencer: Now you worked with Professor Phillip Johnson at UC Berkeley and he's considered by many to be the father of the intelligent design movement. What do you think about intelligent design?

Prof. Schaefer: Yeah, well, intelligent design. I mean, I know most of these people. Quite a few of them are my friends. Phillip Johnson, law professor at Berkeley really got this whole thing started with his book, "Darwin on Trial", and Phil didn't know too much science, but he sensed in his own mind that the evolutionary picture was not satisfying, and he recruited a whole bunch of very bright younger people to take up the cause, like Mike Behe, Bill Dembski, Steve Meyer, so all these people are my friends. I'm not exactly on their team. I agree with them about a lot of things. But to me, much more important than the idea of an intelligent designer, is who is the intelligent designer? For to me, it's more important to know that Jesus Christ is the designer of our universe, he's the one who crafted the whole thing, than the brute fact that there was a designer. So we're a bit in disagreement on these things, but I respect what they have to say, I read their stuff, I enjoy it. I think they've created a discussion about these things, which I think is wholesome, whether they're exactly right about it or not. I think that it does service to science.

Dr. Spencer: I think, you know, Cornelius Van Til with his presuppositional apologetics would say that the place for evidential apologetics like that is in making an unbeliever be uncomfortable in their worldview. And so, I assume you've read *Signature in the Cell* by Stephen Meyer?

Prof. Schaefer: I haven't read the whole thing.

Dr. Spencer: Yeah and you go through those numbers and you look at, if I remember the numbers correctly, the minimum complexity cell that biologists think would be viable would have 250 proteins or something, and if you assume those are typically 150 amino acids long, and you say how likely is it to get 250 proteins of that length by random combinations of amino acids, and you come up with a number like 1 in $10^{41,000}$ power or something, which is completely absurd, obviously, at some level.

Prof. Schaefer: I think Steve Meyer has become the leader of the intelligent design movement, he's a very, very bright guy, and it's interesting to read his stuff. These guys, Dembski, Behe, Meyer, they're brave, I mean they've got almost the entire biological community up in arms against them. So they've taken a lot of hits.

Dr. Spencer: I think, often though, and I think I've read something of yours where you would agree with this statement, that the reason unbelievers are sometimes hostile, is because they know in fact God exists, as Romans 1 says, and so, really underneath their hostility is not a hostility toward you or what you're saying so much as it is a hostility toward a God that they know someday is going to judge them.

Prof. Schaefer: Yeah, that is sometimes true. Yeah, that definitely is sometimes true.

Dr. Spencer: Yes, it is, and I think with that we're out of time for the day, so I'd like to remind our listeners that they can email their questions or comments to info@whatdoesthewordsay.org, and we would appreciate hearing from you.