

# OpenTheo

## God And/Or Evolution? | Joshua Swamidass & Michael Behe

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### The Veritas Forum

Dr. Joshua Swamidass of the Washington University in St. Louis, as well as Dr. Michael Behe of Lehigh University present their reasons for whether or not creationism should be considered scientific. They present their research and also make the case for the harmony between science (particularly evolution) and faith. • From the stage at Texas A&M University. • Please like, share, subscribe to, and review this podcast. Thank you!

### 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 has the resources in their worldview to be tolerant, respectful, and humble toward 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 involved. Today we hear from Dr. Michael Behe, Biochemist at Lehigh University, and Dr. Joshua Swamidass, Biomedical Engineer at Washington University of St. Louis.

In a discussion titled God And/or Evolution, a debate about evolution, intelligent design, and which is right from the stage at Texas A&M University. These two speakers actually have a lot in common, including a belief in God, but they have some major differences as well, which you'll hear about. I'm excited that you're going to have the opportunity, a rare opportunity to see two remarkable scientists discuss how a divine designer might interact with the natural world, and to what design itself is scientifically detectable.

Okay, that's enough from me. Please join me in welcoming Dr. Behe. Howdy! Howdy! Alright, so today we're going to talk about God and/or evolution, and my reply is yes.

Okay, but we might have to make some distinctions and look at some details along the way. As Dr. Green said, I've been in this business a long time for the past 25 years, and I've written three books, and the three books make two major points. The first one is

shown on the lower part of the slide here, that Darwin's mechanism of random mutation and natural selection is grossly inadequate to explain the molecular structures of life.

I am not going to talk about that point at all tonight because of considerations of time. Nonetheless, that's actually the less controversial point of my talk, because a lot of biologists these days think that Darwin's mechanism isn't up to the task. For example, here's a website called the Third Way of Evolution.

You can look it up here, and it lists dozens and dozens of very prominent scientists, philosophers and other academics who think that, as they write on their website, that some neo-Darwinists have elevated natural selection into a unique, creative force without a real empirical basis. That means that the evidence isn't there, that it can do what is claimed for it. The second point that all three of my books try to make is the more controversial one, and that is that instead of Darwinian evolution, I think a better explanation is that many structures, especially at the molecular level, you can tell were designed, were purposely intentionally designed by an intelligent agent, and that has gotten a little bit of notice.

So why do I think that? Well, I'm going to save that for a little while, but first I want to show you three new structures that have been uncovered in fairly recent years. Just to get you in on the progress of science. Here is a photograph on the left of a bug called a plant hopper, which is a pretty common bug.

And about four or five years ago, some English scientists looked very closely at its legs because the plant hopper can jump further and faster than any other bug. And they saw some weird looking bumps down here on the top of their legs, and they scratched their heads and say, "What is that?" Well, it turns out they have a new microscopic technique that allowed them to look even closer, and when they looked closely at those bumps, they saw that they were gears. Real, hard, mechanical, inter-digitating gears.

The next example I want to show you is probably familiar to some folks, and that's called the bacterial flagellum. I wrote about the flagellum in my first book in 1990s before I'm guessing many of you were alive. Si.

And I said, "Well, this flagellum, it's a machine. Look at this. It's actually an outboard motor that bacteria use to swim.

There's this part over here that acts as the propeller. Here's something that acts as a u-joint called the hook. There's a drive shaft.

There's a motor. There's stators. There's bunches of mechanical parts." And I wrote that I didn't think Darwin's mechanism could produce that.

And in my latest book, which was written a year ago, I showed that after more than 20 years, the flagellum, despite having been written about by myself, despite the utter

hostility that many biologists feel towards intelligent design, has still not even been a serious attempt to try to explain its structure in a Darwinian context. But that's not what I want to talk about. I want to talk about just a part of the flagellum.

This little region here called the hook, because a new technique called cryoelectron microscopy has allowed scientists to look more and more closely at larger molecular machines. And they published a year or so ago that here is the hook. This is just the hook region.

It turns out that the drawing on the last slide was simplified and that the flagellum is not just made of simple geometric shapes. It's made of protein molecules, which in themselves are very complex. Here's the motor and the base of the flagellum.

That's still drawn kind of in a cartoon way. But here you see pretty much all the atoms of the molecules that make up the hook. And as I said, it's a U joint.

And that means that when the motor rotates down here, it rotates the base of it up here. But instead of the top here rotating wildly around here, it just rotates in its own plane. It transmits the force of rotating here to a different angle.

And they made a little movie of it. And you can see it rotating. Here it's down here.

It's rotating around. But up here it's just rotating in this plane here. Now there's a cutaway just to show you a portion of it so that you can zoom in and see how it works.

These red and blue helical things stay pretty much in place. But notice the globby green and yellow things, they come closer together and then further apart on the other side, closer together on the inside, further apart on the outside. And that's how it allows this to act as a universal joint.

The third example I want to show you is Bacteria Phage T4. Here's an electron micrograph of Bacteria Phage T4. Phages are viruses which infect bacteria and eat them.

And here's an artist's conception, a drawing of the Bacteria Phage. But again, using that new technique, some scientists have looked at the region called the base plate of the Bacteria Phage. And they, well, I'm getting ahead of myself.

Here is the whole structure of the Phage before it attaches to a cell membrane. And this is it after. And maybe you can see that when it attaches, it snaps.

It triggers a contraction of this. And as it contracts, it pushes down this syringe and injects the DNA from the head of the Phage into the cell. Notice that all of these parts are here for one purpose, to inject the DNA into the cell.

But again, people have done this new microscopy here. And here's a little video of a computer simulation of how it works. Notice the parts move in synchrony, these blue

things move up and attach up here to stabilize this structure and many other details too.

This looks like something from the War of the Worlds. So these are three reasons why I think there is design in biology. Okay, you might say, will you spell that out a little bit more? Yes.

And the rest of my talk is going to be focused on that second point, the point that these things are likely intelligently designed. So we're going to deal with the question, how do we detect design? Why do we think some things are designed and others not? Well, people have been thinking about this for a while. A philosopher, a Scottish philosopher named Thomas Reid, who lived in the 1700s, talked about the design principle.

That is the general principle that intelligence in the cause can be inferred from its marks or signs in the effect. We can't see intelligence, but we can see things that have been made by intelligent beings. And that's how we detect design.

That's how we detect intelligence. So what is intelligent design? If you look in a dictionary, you see a definition kind of like this that it is the purposeful or inventive arrangement of parts or details. And we can simplify that down and say that design is the purposeful arrangement of parts.

And that means that we infer design whenever parts appear to have been arranged for a purpose. Okay, let's try to illustrate that. Let's look at the next slide.

It's a far side cartoon. I love the far side. And as you can see, we got a troop of jungle explorers here, and the lead explorer has been strung up and skewered.

And this guy turns to this guy and says, that's why I never walk in front. Where is the live by? I can assure you. Now everybody in this auditorium, everybody in this auditorium looks at this cartoon and you immediately know that this was designed.

That's not an accident. As a matter of fact, the humor of the cartoon depends upon you recognizing the design. So how do you know that? How do you know that this was designed? You know it's designed because you see a number of parts that have been arranged to perform a function.

You see the purposeful arrangement of parts. It turns out that a purposeful arrangement of parts is the way, the only way that we recognize the work of a mind. Let's look at this next slide.

This fellow in the bed is a man named Jean Dominique Bolby. He was the editor of the French magazine, El E.L.E. of High Fashion magazine. Really a writer, and in his early 40s he had a stroke, which left him absolutely paralyzed.

Except he could blink his left eye. And he blinked his eye to an interpreter and she

recorded an entire book that he wrote while paralyzed describing his experiences in this, a very moving book. And it was made into a major motion picture as well.

Now anybody walking by his bed, if they just saw him lying, they wouldn't know if he had a mind or not. But by purposefully moving his eyelid, he was able to show that he had a very active mind. So we recognize intelligence by the purposeful arrangement of parts, which can be things like eye blinks or machine parts or letters or sounds of a voice.

Okay, there are a couple of things that we have to be careful about or we'll get confused about design. One is that the strength of the design inference is quantitative. The more parts you have and the more closely they are arranged to fit a function, the more and more and more confident you can be in design.

For example, if you look at these mountains, you say, well, they're made by the laws of nature, but there's no reason to think they were designed specifically for themselves. Look at this thing, this is called the old band of the mountain, and it kind of sort of resembles a face, but it likely wasn't actually made by anybody. But here are some faces down here on Mount Rushmore, and they have many parts that are very closely arranged to fit the purpose of portraying the images of presidents of the United States.

So the point is that design is a quantitative inference. We can be more or less sure of it, but as in the case of Mount Rushmore, with sufficient evidence, you can be certain of design. Another point to be careful of is that design can be found at multiple independent levels.

And that can be exemplified by building materials. If you look at cinder blocks and lumber in this lumber yard, these are designed. I mean, they're shaped for purposes, but then they can be put together in any number of ways.

And the design of this house, although it depends on the design of the building materials, is an independent level of design. And you can have many different kinds of houses, and those are independent levels of design. The final point is that design, purposeful design, may leave a residue of disorder.

For example, here's a carpenter shaving a piece of wood to allow it to fit into something he's making. Now, the wood shavings here, they're a result of the design, but they are a residue of disorder. So, in the lead up to this, some people compared Mount Everest to Mount Rushmore.

Some Christians say that, well, they think everything was designed. They think that Mount Everest is designed too. For example, Professor Swaminos likes to use that as an example.

And intelligent design folks sometimes use Mount Rushmore as a kind of icon to illustrate why we think there's design beyond nature. And I understand how somebody could look

at the laws of the universe and say, wow, those portray great foresight and great planning. And I agree.

For example, the laws of nature have been discovered to be extraordinarily fine-tuned by physicists over the past number of decades. That is, if the laws of physics had been a tiny but different, life could not have existed. And I agree, that's great evidence of design.

But I think that that is akin to the building blocks of the universe and that we need and that the living structures that, for example, I showed you, are levels of design beyond the laws of the universe. I think a good illustration of what I think is the kaleidoscope. I'm sure many people here had a kaleidoscope as a kid.

Some probably have a couple now. But in a kaleidoscope, a kaleidoscope has a number of mirrors and colored particles. And as you spin it around, it can form very pretty pictures.

For example, that's beautiful. And if you look at it and say, yeah, the guy who made the kaleidoscope really did a great job. As a matter of fact, I'd go so far as to say, that's the Mount Everest of kaleidoscope pictures.

It's really, really pretty. But if you got to spun the kaleidoscope and you saw this, you'd say, what? Wait. Huh? Say, whoa, boy.

Maybe that's a little peculiar, but hey, you know, maybe it's like the old man of the mountain. But if you spun the kaleidoscope and you got this, which is actually called the kaleidoscope cat, it's a drawing by an artist named Louis Wayne, no way would you think that that was produced by the simple system of the kaleidoscope. If you did see that, you'd know that the maker of the kaleidoscope somehow manipulated it or put extra stuff into it and deliberately intended it to be able to make things like that.

We have minds. You have a mind, and one of the very basic rational powers of your mind is to recognize other minds. And you recognize them solely by the purposeful arrangement of parts.

So I think if you think about it and you reflect on your own mental abilities, that you'll see that a conclusion of intelligent design is rationally compelling. And I have to say that I have to warn you that not everyone in biology agrees with me. There's one or two others besides, even besides Professor Swamadas.

And so I have written responses to -- nothing personal. That's not supposed to be you. I've written responses to critics, and so if you want to get into the weeds on this, you can visit my website at Lehigh University here, or the Discovery Institute of which I'm a member.

They've got a lot of my stuff up on their web service. And also the website of my new book, DarwinDevolves.com. So thanks very much for your attention. Hello, my name is Dr. Joshua Swamadas, and let's give Mike another hand.

I mean, that was really great. I first met Mike in 1998. I was in your seats.

Well, not here in Texas A&M. This is my first time to college station. Thank you for having me.

Howdy. Hi. All right.

I figured something out. But this is actually University of California Irvine, and I was in the Barclay Theatre, and I saw Mike actually talk about Darwin's black box. And I was a sophomore college sitting there just like you.

And so it's kind of a little bit of a trip to be here right now. [LAUGHTER] You know, baby, one of you, 20 years from now, will be on stage with me, if I'm still alive. [LAUGHTER] I'm only 41, but you never know what's going to happen.

And I think that would be really interesting. And so it's a privilege to be here, and I have a lot of respect for Mike, even though we have major disagreements. I am a scientist, a secular scientist.

I'm going to explain about that a little bit more. But really, I'm coming here in the name of peaceful science. And you can find us a line, and you can see exchanges between me and other ID proponents, and with ID and B. He's worked there too, Mike's worked there too.

But really, I'm coming to this conversation and wanting to think through how we can have better conversations to really understand each other. And I'm telling you that because I'm going to tell you about myself. I'm going to tell you what I think.

But I'm really trying to figure out and understand really where my common ground is with you, Mike. And I hope you pay attention so we can really mark that out clearly. And also, where are the places that we're in disagreement about, and have a clearly understood, maybe even a little bit more than we do now.

Because I think we're a really critical moment right now where we get to decide what it's going to be like for the next 20 years. And maybe if we understand each other, and what's happened in the last 20 years, maybe we can do a better job. Wouldn't that be great? Thanks.

So as I get into that, I want to tell you a little bit about who I am, just so you understand. I call myself a confessing scientist sometimes. What that means is I'm here, and I just want to be truthful with you.

That's my promise to you, or my goal. That's what I aspire to be. I want to be truthful with you.

I'm going to tell you what I've seen, even when it's uncomfortable for you. I want to think. And I also tell you things that are that maybe might even put me at risk amongst my colleagues.

That's my commitment to you. Am I here to please anyone? I want to be a servant to you, in that sense. And in that sense, I am a scientist in the church, and I'm also a Christian in science, and I want to be truthful in both directions.

I affirm evolutionary science. I was raising young Earth creationists, but I've seen immense amount of evidence for common descent. And I'll explain a little bit of that now.

I've seen that that's controversial. You may disagree with me right now about that. And that's okay.

Am I trying to convince you that I'm correct? I'm just telling you how I see things. I also believe that God designed us all, in the sense that he created us all. And I'll talk about that as well, too.

And that might get me in trouble with other people. I'm also, ironically, in many ways, certainly not what I expected 20 years ago. I'm out there also as a critic of intelligent design.

And so there is real disagreements here as well, but there's also commonality. And what I hope to do is mark out what some of those agreements and disagreements are. And I really want to do that in regards to Dr. Behe.

He's the famous one you all know about. Most of you didn't know who I was until like a week ago, right? He's written, he has this trilogy completed, the Behe trilogy. I had talked about Darwin's black box, but then there was the Edge of Evolution, which is a really interesting and important thing.

And also Darwin Devalls. And I had an incredible privilege of writing the Review for Science magazine about Darwin Devalls. Spoiler alert, it wasn't positive, and we're not going to get into the details here.

I actually have a great deal of, well, honestly affection towards several people in ID. Dr. James Torres here, I'm looking right now. And also, you know, Mike Behe, too.

This isn't personal, it's just an honest disagreement. But like I said, what I really want to do is see if I can mark out and understand where some of our agreements and disagreements are. Now, there's some things that I did.



I sat down and made a list of all the things that I agreed with, and I picked out a few of them. There's actually quite more here than I could put. I mean, for example, I think I forgot to mention that Dr. Behe is a Catholic.

I'm not Catholic, I'm an evangelical Christian. But Catholics are Christians, too, right? [LAUGHTER] It's funny, when I first met him 20 years ago, he wasn't yet public about that. And so we're all a bit confused.

He was making a secular argument. And so anyways, he's a Catholic, just in case you didn't know. For that reason, we both believe that God created all things.

And in that sense, I believe God designed everything. I actually prefer the word "created" to design. And one of the things that surprised me as I started talking to my secular colleagues and atheists in science is that they actually preferred it when I said I believe that God created everything instead of saying God designed everything, which was a little bit surprising.

I thought that they would be more bothered by that, but it turns out that they liked it. They felt like it was more upfront and direct. The other thing that we really agree with is the common descent of man.

You can correct me if I'm wrong, by the way. I don't want to misrepresent you. When I first met Mike, I was-- and I flipped between Dr. Beahy because that's how I first met him to Mike, which he said I could call him now.

So, no disrespect, Matt. And he actually affirmed common descent at the time, but I didn't. I didn't understand it exactly.

And the reason why is he talks about Darwinism, but really the strongest evidence I think for-- and I think you pointed to that in your last book too, for common descent comes from not Darwinism, but neutral theory, which is another evolutionary mechanism that's really important. And at the very least, I think that our honest look at the evidence, a knowledgeable look at that evidence really shows it at least looks like common descent. Like we share common ancestors with the great apes.

Now, to be clear, that doesn't mean that Genesis story didn't actually happen in a literal way. I just wrote a book showing how both could be true at the same time. Isn't that cool? Another thing too is that we both agree that Darwinism isn't sufficient.

Now, this is one of the things that surprised me when I started to get to know biology. So, when I first heard Darwin's black box, I thought that when he's talking about Darwinism, that's actually how most modern scientists understood evolution. And in fact, Dr. B. He's right that actually there are large number of scientists that don't actually think Darwinism is sufficient.

But it's not just the third way people. Even-- I haven't actually yet met a Darwinist in science, which is surprising. And so, it's correct.

Darwin's mechanism is not a sufficient way to explain what we see. I mean, that raises some questions that get some disagreements, but Darwinism is just not actually what modern evolutionary science teaches as the correct way to understand the evolutionary mechanism. I think another thing that was really interesting to find out, and I actually strongly agree with Mike on this, is that design or creation cannot always be detected or demonstrated from evidence.

One place where we both agree you can't make a scientific argument for a design or gods involvement or those sorts of things. I don't know how you want to say it, is actually in human evolution. That we don't have enough knowledge yet to do that, as I think the way how Mike put it.

And I agree. I think that there are times when God creates things. And even things where it's the most important things to us.

I mean, the creation of humans is pretty important, don't you think? And yet for some reason, both of us come to this point of view where we say we can't actually show from biochemical or genetic processes that God was somehow necessary, yet I also think that both of us believe that God was involved, and maybe even was necessary. I'm even open to the idea that God, de Novo, created Adam and Eve, out of the dust without parents. And we just don't have the tools in science to tell us.

I actually think that science is far more limited. When you become a practicing scientist, one of the first things you find out, in whatever area of science you're in, is that science cannot even begin to answer the vast majority of the questions you bring to it. It's not like you have to go be tricky to find the one little way to squeeze it in to get the question that can't be answered.

I'm just telling you, the vast majority of questions that you care about, science cannot answer. And so it's not surprising, therefore, that if we care about design and nature, which I do, if we care about creation, it's not surprising to me that in the vast majority of cases where I look, I can't find a way to demonstrate that scientifically. I'm not surprised.

And I'm also not bothered. I want to talk to you a little bit about a place where I think Mike and I agree, which is the neutral theory of evolution and common ascent. And I'm going to take you through a key paper, two key figures in it so you understand it, from the chimpanzee genome, which is sequenced when I was in my third year PhD in 2005.

2005 was a big year for Michael B. He too, if you know the history here. But in the lead up to some important events that year, this paper was published. And one of the key figures concerns a comparison between these four animals of sorts.

So there's me up there. That's a man of a sort, right, a human. And that is a chimpanzee.

He's in a more thoughtful pose than me right now. But I think I have a mind that's more impressive, but I don't know. Then this is a mouse, and that's a rat.

Now, from a human design point of view, you look at those, and which has a greater functional difference? Well, I like to think that the mice in the rat are probably a little bit more similar from a functional point of view than the chimpanzee and the man, right? And I think that's true. And so you could say from that point of view, what do you expect regarding the comparisons of their genomes? And you might say, well, then we expect to see more differences here than here. That's just one way to think about it.

Well, it turns out that evolution has a quantitative theory, and I'm just going to give you a simplified version of it. It's rate times time equals distance. Or like, how fast the car is moving for how long it's moving tells you how far it's moved.

That's another way to think about it. Now, that's not the precise formula. That's approximately what it is.

That comes from neutral theory. It's also sometimes called the molecular clock. That's not the precise formula, but can you guys go with me for their firm moment? And what we find out is that the differences between mice and chimpanzees by one measure, and there are other measures, we'll give you an explanation of that in a moment, is 98%, about 98%, about 2% difference.

And by that same measure, and the key thing is to do it with the same measure when you look at mice and chimps. It's about 80%, it's about 20% different when it comes to mice and rats. So it's 98% similar, 80% similar, so it's about 10 times more different.

And it turns out that this formula explains why. It turns out that mice and rats mutate more quickly. They actually are moving quicker, apart from a starting point.

And they've also been separated for a longer period of time, so they've also been driving for longer. Compare that with humans and chimps, that we've been separated for less time, and we mutate slower. So that formula and those measurable facts end up giving us an explanation for this bizarre fact of the world.

Now I've talked to ID proponents, I've talked to creationists, I've asked them for a mathematical explanation for this feature of the world. No one has been able to give me an answer that does not include common descent. And maybe there is some answer out there, but that is the principle by which scientists work.

We want mathematical explanations, or as simple as this that I can explain to you this way. That makes sense? Now this is actually where it is in the paper. You can see here, this is from the paper in 2005 on the chimpanzee genome.

You can see here that's just how different the chimpanzees and humans are. They're really close to one another compared to the mice and rats. Isn't that cool? And so that's actually quantitative data there.

Now I'll show you one other example here. So these are all the different chromosomes, and this is how different they are across all the different chromosomes. This is one, two A, B, three, four, five, six.

And you can see how different they are, and higher is more different lower, is less different. You guys tracking me here? Now there's two chromosomes that look different than the others. Two are not like the others, right? The first one is the X chromosome, which is less, which is more similar than most.

And the Y chromosome is less similar than most. Well, it turns out that neutral theory gives us a completely clear, testable mathematical explanation for it. The reason why is that Y chromosomes spend all of their time in men, X chromosomes spend most of their time in women, and in women to have, because of the way how it works with, you know, eggs and sperm and all that, women are mutating less every generation than men are.

And so that's why the X chromosome is less different, and why the Y chromosome is more different. Does that make sense? Now once again, I've asked ID proponents and creationists to give me some other mathematical explanation for this, other than having a common starting point and moving apart by that normal process, and no one's been able to produce everything. That's why the vast majority of scientists, including Dr. Bihi, say, at the very least it looks like common descent.

Maybe there's some other stuff going on if you're adding God, but it looks like common descent. Alright, to be clear, that doesn't mean that Genesis is ruled out. Now, I always forget when I put this up, there's nudity, I hope no one's offended.

It's art, right? It turns out that one of the big confusions is that this isn't conflict of Genesis, and my book actually shows that that's not the case. One of the cases I make here, following the rules of mainstream science to the point that even atheist biologists endorse this book, and publicly, and several have really been supportive, even involved in peaceful science, have done this, is that there's no evidence against the denovo creation of Adam and Eve. Part of the reason why is I just used the actual rules of mainstream science to make this case.

Now I've got to tell you, it was risky. I put this forward first when I didn't have tenure. And this is actually another place where I think Mike and I have some common ground.

I think there are certain things that are important enough to actually risk our scientific reputation. Risk your scientific reputation. And that's actually what I've respected about him, what I respected about him back in 1998.

One reason why, and I don't think it's fair, and frankly, I think it's a bit of an ad hominem. Some people tell me that the difference between me and Michael Beahy is that I don't have the courage to risk my scientific reputation, and I just want to go along with the consensus. I've got to tell you, I put a lot on the line, and I did it without tenure.

If I disagree, it is not because I'm afraid to agree with Michael Beahy. It's because I really do disagree. I think I've earned the right to say that.

Is that okay? So do we disagree? We do. I did agree for a long time. As in my "Got Through My Biological Education," I just found out that there was stuff that just didn't make sense to me in the same way as I did before.

And I say that, acknowledging that I think, Mike, I think you're a great writer, I think that in fact, I don't think we knew 20 years ago what was going to happen. I mean, it was a really exciting idea, idea back then, because it didn't exist really for, you know, before. I mean, it really hit the scene really through his book.

And we didn't know what was going to happen. It was an argument that engaged indirectly with Christian doctrine, but it did it in a way that was with secular language, and the question was, is this going to actually make its way in science? Now we know the answer to that. But I think also I found as I looked into it, entirely convinced in the beginning that as I learned more and more about biology, it just wasn't as convincing as it was before.

And ultimately to the point where I just think I disagree scientifically on many of the points. It's not personal. And I don't even think we're going to get into those details right now, because I don't even really know if that's how science is litigated.

If you want to know those details, come argue with me at peaceful science. I'm happy to do so. So what I really moved from was seeing, I mean, we'll see here's the thing.

I think both of Mike and I agree that both Everest and Rushmore are created. Right, Mike? These are both created, right? And different senses of the word. That's right.

What I would say is that for me, I see biology and it looks a lot more like Mount Everest. This doesn't mean that there isn't parts that God didn't intervene and do things. And maybe it was even necessary.

I'm not trying to say it was entirely by natural mechanisms. This is not to deny the importance of God's involvement in the world. But when I look at it, it doesn't look like Mount Rushmore to me.

It looks like Mount Everest. And in fact, I think that's how it is for most biologists. And I know this is very tricky here, because I'm just telling you what I've seen, but I told you, my goal is just to be honest with you.

And I can explain it to you with your questions and help you understand. So as I've looked at it, having really started from really reading closely, Mike's stuff, that's just where I end up. You might wonder, well, how do I make sense of some of the examples he gave? Well, I agree.

They do look like they're a human design. And that's a good analogy, but analogy has only worked to a point. We also have to talk about how they're different than a human design, and that's a part of the discussion that was just left out.

So we can talk about how it looked like a human design. We also have to discuss how it's different to really think about it from both sides at the same time, and that was just missing in that conversation for me. I'll give you another difference.

So this is a really important document. It's really short, which is why I can put it all the way up here. It's called the scientific descent from Darwinism.

I'm going to read it to you right now. This is actually what I would say is really defined in many ways, the ID movement. And also, in a lot of ways, you can even see this echo through Mike's presentation just now.

So the scientific descent from Darwinism is that we are skeptical of the claims for the ability of random mutation in natural selection to account for the complexity of life. Careful examination of the evidence for Darwinian theory should be encouraged. And that's really what Mike's main message, I would say, has been for the last 20 years.

And here's the big surprise for me when I got into actually studying evolutionary science. I found out that everyone actually agrees with this. The reason why is, back in 1968, you were in high school in 1968, right? That's when Hal Dain's dilemma was solved in a big part by a motocomerum, who showed that natural and positive selection driven change could not account for molecular machines, could not account for the changes in DNA, but in fact, neutral mechanisms could.

And in fact, those are more important when considering DNA and molecular machines and all those sorts of things than the Darwinian mechanism. And so in a lot of ways, when you know that, it starts to sound like a scientific descent from Newtonian mechanics, where there's maybe some legitimacy to Newtonian mechanics, but there's a procession of mercury, there's black holes, there's all this evidence for relativity. And so we know that Newtonian mechanics is sufficient to explain what we know in the world.

But we already knew that. That's been known for a really long time. So why would we have to descend from it? That ends up becoming the difficulty I have with ID now, where I think maybe even some of their arguments are correct.

I just don't know what has to do with how modern scientists actually understand evolutionary science, and that's like the gap I'm trying to bridge that I can't really make

sense of. Now, a distance to me is that, like I said, I'm a confessing scientist and it works both ways. I just did something pretty uncomfortable for some people here describing evidence for common descent.

But I also do things like this, which are uncomfortable for me because of the professional risk, and maybe is any uncomfortable for some of my colleagues, is that instead of focusing on evidence for God in nature, I'm really focused on confessing what I found in Jesus. I believe that God exists and that he's good and he wants to be known. And the way how I know that is because he raised this man, Jesus, from the dead.

And I'll tell you, I'm a scientist. I love science. Science is beautiful.

I've devoted my life to science. And I hope some of you do too. Are there any scientists, science students in the room? Yeah, there's a lot of you.

I'm telling you science is worth giving your life to. But I'll tell you what. Nothing I found in science is greater than what I found in Jesus.

[Applause] If evolution is true, Jesus is greater. If evolution is false, Jesus is greater. I've seen all of the arguments for creation.

Jesus is greater. I've seen all the arguments for ID. Jesus is greater.

And what I feel that I'm required to do as an active obedience, not because of it, to be clear, I don't have a gift of evangelism. You know who has a gift of evangelism? Dr. Jim Torre right here. This man has a gift of evangelism.

I don't. But I do know I'm a follower of Jesus, and I've just commanded me to confess with my mouth that he is Lord. I have to do that in risk.

So I know that even though if I sell everything to buy a worthless plot of land, that risks everything in my career, then I know I bought a field that has a hidden treasure that's worth it. So I've taken risks. I think it's worth -- it's been difficult actually at times.

My colleagues have been fair to me. I think if they weren't fair to me, I pray and I hope that I would be the person who would go into exile from science, knowing I've chosen the greater thing. And now I know that Mike would agree with everything I said, and so I'm not all trying to speak that way.

I'm just saying my emphasis has been on that, and that's what it will be for the next 20 years. And if you find something better than that, I'd really like to know if you could show me something better than that. Because that's the one thing I found that's worth risking what I have in science.

The other thing that I think is really valuable is something that looks like this. This is what the workshops were to go over my book. There was over 30 scholars that showed

up in person.

Some of those people are actually here in this room right now, and we talked about science, about theology, about philosophy. It included Alan Templeton, a Jewish population geneticist, Richard Averbeck, a leading Old Testament scholar. This is a young earth creationist here.

This is Ken Turner. This is A.J. Roberts from Reasons to Believe. This is Ann Gager from the Discover Institute.

This right here is Bill Craig. You guys know who he is, right? We're writing a book now together of all things. I didn't realize that was going to happen.

It also includes an atheist down here. You'll be able to find Nathan Lent somewhere. Actually, more than one non-Christian was in the room.

We were just talking about the grand question of what it means to be human together. It was a beautiful conversation. People walked away telling me that I didn't realize that I could have a conversation like this with an atheist.

It would be this engaging. From atheists, I heard, "Wow, I didn't realize it could be so much fun to talk to Christians about theology." What's going on is we're gathering on fire, talking about the grand conversation, and that is what origin is supposed to be. It's not supposed to be an ugly fight.

The question that I'm really thinking about here, what I want to get into, I get into time, is could there be a better way? My time is up. I'm going to stop on that slide. It is my last slide.

I'll get to that in the last five minutes. I really appreciate your talk. Oh, wait, should I say, "Howdy"? [laughter] I really enjoy your talk.

I certainly agree that the science we talk about up here is pales in importance to the person of Christ. I'll leave it at that. Nonetheless, science is its own discipline.

There are some small issues that should be addressed. Let me just respond to a few points. One is that the interesting slide of differences in DNA between mice and rats and human and chimps.

There's 98% between 2% and 80% between the mouse and the rat. Well, you can draw some conclusions out of that. But one conclusion that strikes me is that the percentage of DNA in common then is a real crummy measure of biological similarity.

If only 2% change from these animals, chimpanzees or wild creatures to Albert Einstein, then that 2% -- maybe that's not telling us all the story. And if there's 20% difference between two creatures as similar as mice and rats, well, again, maybe that's not the big



story. And that doesn't say anything about design or common descent or anything.

It just means that maybe this focus on percentage similarity is not necessarily the case or not necessarily a definitive factor. Okay. So, let me just remind you that you have the power to recognize design.

And sure, there can be cases like the Old Man of the Mountain or even Mount Rushmore, where you don't think there's design or you think it's at the basic level of the laws of nature. But when you see this, and when you see this, and when you see that, that's design. And that is not something that can be sloughed off.

Science has a responsibility to try to account for the structures of nature. Many times, science has changed its views throughout the history of science. Going from, say, Newton's theories to Einstein's and many others, maybe we just need a different conception of the science of biology to account for things like this.

Professor Swaminos mentioned neutral theory. And he noticed that I was in high school when, let's see, where is this? Wait a second, I thought I had moved that. There he is.

When this fellow, Motu Kamora, wrote his very influential, well, actually his first paper, his book came out later called the Neutral Theory of Molecular Evolution. And it was a great advance. What it said is that most changes when a nucleotide in DNA is switched out for another one, they don't do anything.

It doesn't do anything. And that's very true. And that can help us track changes in DNA.

What it doesn't do is explain those mechanical structures that I showed you on the previous slides. What's more, Dr. Kamora himself thought that his theory does not explain much about such structures. He wrote that the theory does not deny the role of natural selection in determining the course of adaptive evolution.

But it assumes that only my new fraction of DNA changes in evolution are adaptive. So these are what are called neutral. They can come.

They can go, la la la. Who cares? But the big changes, the important ones, the ones that put together complex interactive structures such as we've seen, that has nothing to do with this. So the examples that Josh has put up are interesting and useful, but they don't speak at all to the examples that we saw.

Well, we'll just look at that one. I will just do one more thing. What I want to do is make crystal clear my reasoning behind design, behind the conclusion that many structures in life are purposely designed.

So let me spell it out here. The next five slides will summarize what I call the biochemical argument for design. Number one, we know from experience that intelligent beings can

have purposes, and that to achieve a purpose, they can choose to arrange whatever is within their power to manipulate.

As a result, the action of an intelligent being can be detected by perceiving a purposeful arrangement of parts. Number two, whenever we are familiar with a causal chain that produces a sufficiently complex purposeful arrangement of inanimate parts, we always find one of the causes to be an intelligent agent, acting either proximately or remotely in the causal chain, either does it directly or has something else to do it at his bidding. The molecular basis of life consists of inanimate molecules and atoms.

The oxygen, the carbon, the sulfur that occur in life are the same that occur in non-living things. They consist of inanimate molecules such as proteins, polysaccharides, lipids, and nucleic acids. In living beings, these molecules are often found combined in extraordinarily complex purposeful arrangements.

Number four, claims of marvelous abilities for Darwinian processes notwithstanding, and let me add every other unintelligent non-Darwinian process that has been proposed over the past few decades. When examined in -- we know of no unintelligent process that when examined in sufficient detail mimics the ability of intelligence to arrange parts for a purpose. And then number five by one, two, three, and four, we are intellectually justified in concluding that a cause of many complex functional molecular aspects of life was an intelligent being, acting either proximately or remotely.

So thank you, Mike. I mean, let's be clear. I don't think anyone will make the argument for a reducible complexity as well as Mike.

Can everyone agree with that? (Laughter and applause) And he's done it faithfully, consistently, for over 20 years. And I think this is an important point to make because, look, when I first met you, Mike, it was a different world, wasn't it? It was Bill Clinton as president. Most of you probably don't even know who he is.

It's like, oh, yeah, that's the husband of a -- a person who might be a presidential candidate. No, but he actually used to be president. I know crazy, right? Anyways, we didn't know actually where things were going to go.

I think that's what was so exciting about intelligent design in 1998. We didn't know what was going to happen. A lot's happened since then.

We know where it goes. I think you would agree with me that if you are going to take forward publicly an intelligent design argument, it's going to get you kicked out of science right now. And we can talk about why, and we can talk about if that's fair.

Those are our legitimate questions. And I think that some of the ideas and the ideas that we have to do with this, and I think that some of the ideas that we have to do with this, and some of the ideas that we have to do with this, and some of the ideas that we have

to do with this, and some of the ideas that we have to do with this, and some of the ideas that we have to do with this, and some of the ideas that we have to do with this, and now that actually, ID is very strongly, and what I think is actually fairly remarkable, which has been stunning for me, actually, is that scientists are just, especially biologists for the most part, not all, not all scientists to be clear, but most biologists are very vehemently opposed to ID, but they're actually not opposed necessarily to Christians that are clear, for example, about the resurrection, which surprised me. So I think this is a good moment to just pause and recognize what was good about past and where we want to go for the next 20 years.

And I just think there's got to be a better way, and I think this picture maybe gives us a little bit of a sense of what the better we could look like. This is from those workshops. This is Walter Bradley.

You guys know who he is? Yeah, he used to be the chair of which department? Mechanical Engineering here. And he's also one of the founders of Intelligent Design. Does anyone know who this is? This is Nathan Lent.

He's an atheist. He's an ex-Catholic, actually. He's also a really nice guy.

We actually met each other because we were both getting, like, articles from the Discover Institute, like, attacking us. Well, critiquing us. And a very friendly way of force.

And so we were kind of commiserating together online. We got introduced. And we found out we had a lot of common.

And it's interesting. He chose to personally go to this workshop, sit down and talk to a ton of theologians. He sent me these texts, which I'll make public maybe a little bit later, where he talks about when he landed in St. Louis.

He's like, "Oh, my gosh. This is an atheist writing this." I just realized that I just agreed to be the room full of conservative Christians. He's gay, married to a man with kids, ex-Catholic, okay? Just give some context.

Please pray for me. [ Laughter ] Isn't that beautiful? And I responded back. These are those paraphrases from my room.

I said, "You know, Nathan, I think you're going to be surprised. These are conservative Christians, but they're going to -- I think they're going to treat you far more kindly than you expect. And if anyone treats you rudely, you're my guest.

You let me know and they have to deal with me." And he came and he spent time on a hot button issues, like literally talking to Walter Bradley and Nathan Lance sitting there. And I'm sitting there kind of just having a ball watching this. Curtis Henderson from HBU is there, too.

He's right here in the front row. And I'm watching this and I think, "This is beautiful." And he's sitting there and you can see something happening where it wasn't actually a Christian meeting. I mean, this book isn't even a Christian book.

It's just a secular book, actually. And I just thought that there was real community being formed even with non-Christians. I think there was something -- something that actually - I think many people who came and participated in it walked away wondering, "You know, how do we make this happen again? How can that go forward?" And one of the things that happened later, about six months later, is I sent Nathan a PDF copy of my book and I asked, "Hey, would you consider writing an endorsement for this?" This is a book that discusses the de novo creation of Adam and Eve, not being in conflict with science.

He's an atheist. And I asked him, "Hey, would you endorse it?" He spent a lot of time thinking about it and he came back and said, "Yes." Now, when we did an endorsement, he also wrote an article in USA Today explaining why. I really encourage you to look at that.

And what I saw was there was an opportunity here for us to have a confident voice as Christians in the public square engaged with science in a way that actually makes sense to people and it's more theologically engaged. So, for example, one of the questions that I think even atheists want to engage from your slides, Mike, is that question of the virus that looks designed. A question that a lot of us are asking is a theological question.

It's not even scientific. If it looks designed, why did God design a virus? Aren't you all wondering that? Why did he do that? And that theological question is really deeply important. It gets to the core questions of our faith.

It also interacts in this deep way with science in a way that actually, I think, is where the interesting conversation is. And actually, we're even atheist scientists want to go and meet us then. Because, you know, when it comes to the grand questions, about what it means to be human, where we are and where we came from, you know, we can present our simple answers, but the grand questions are subtle, simple answers.

And everyone knows that. And that's part of the fun of it. That's what makes the exchange dynamic.

That's what makes it valuable to have people in the room that we disagree with. So, I think there's an opportunity for a better way, a way that's more distinctly Christian, that's engaged with science, where we even talk about how God created things, and in that sense, he designed us, and we can do it in a way that we can even do it before we have tenure. I think that's worth pursuing.

So, you want to try pursuing it with me? [applause] One of the most accomplished

chemists in the world is with us tonight is Dr. James Tour from Rice University, and I'm going to let him ask the first question. Okay, so, Joshua, you and I have spoken many times, and I consider you a good friend. We've disagreed on several things, and you mentioned it again tonight, that you mentioned mechanism, and being an organic chemist, and from the chemists who are in here, we look at mechanism very specifically.

It is so hard to fathom how you can get mechanistic changes in a complex system to change one into another, and the problem is that when this is described by biologists, it sounds as if they're storytelling. Well, and even when I've talked to you, I say, "How does it change?" You say, "Well, one small change at a time." You say, "Okay, get me started. What would change? Tell me how one changes into another." It's extremely hard to see that, so you can come with little models that are mathematical that talk about relations, but you ultimately have to change a lot of chemistry that's really difficult to begin to look at these evolutionary models that are going to allow you to have these kind of complexities of change.

How do you think about this happening when you really have to go back to your organic chemistry from when you were a sophomore in 1998? They say, "What kind of reactions are you going to do to do that?" That's a great question. And I also echo that I think it was an important way. So you're correct, and I want to agree with you, that neutral theory that's put forward by Motu Kamura does not explain how new functions arise.

That's correct. And this gets to this issue of how do you change a complex system? And so I agree with you. It doesn't.

What it does is give us some evidence for common descent. That's all I talked about. And I've punted on the question of how that arose, because it's actually orthogonal to the question of that.

So what I would say is that biology is pretty complex and it's not intuitive. Can you grant me that there are things in science that are not intuitive? He's not a guest for the record. And that actually, there's things that are obvious to you as a chemist, Jim, that are going to just confuse many people in this room who are not chemists.

Can you agree with me on that? And I'm just telling you, like any complex area, that's how it is with biology. And so not knowing that complexity, I think this argument makes an intense amount of sense. As you understand, actually what's going on in biology, it's just basically your intuitions get reshaped.

And so that's what's going on. So I think there's a legitimacy to where you're coming from, because chemical intuitions won't explain what I'm talking about. It requires some biological intuitions that are shaped in a different way.

I know it's going to be not being satisfying, but hey, I'm hanging out with you tomorrow.

We'll talk about it in hours. Alright, a number of questions have come in.

I'll go ahead and ask a question to Dr. Behe to get continuous moving. And I know you've been asked this question before, Dr. Behe. If there's intelligent design, when was that applied? Is that all, is that happening gradually along the way? Is it all front loaded at the beginning of the universe? If intelligent design happens, and what way does that design enter the picture? Yeah, that is an excellent question.

And I have been asked before, and I always tell people, "I don't know." So you can quote me on that too. [laughter] Design is the first thing one can apprehend about a system. Suppose you were from another country, or you had a friend from another country, who walked down a road in South Dakota, turned a bend, and saw, yes, Mount Rushmore.

The person who had never heard of it, or seen it before, would not know when it was made, would not know who made it, would not know why it was made. All sorts of these related questions, but would know immediately that it was made, that it was designed. As a matter of fact, you have to apprehend that something is designed before you even ask these other questions.

So questions about how this was designed, how it was affected, are there a discrete axe, or is it guided globally? Those are great questions, but it's often times very hard to find answers for these other questions. For example, European explorers who landed on Easter Island and saw these big statue monoliths immediately knew that they were designed. But there were no people on the island, and they're huge.

How did they get here? How were they made? And it was centuries before anybody had a clue as to the answers to those. So we don't know, we don't have enough data to decide when design acts, if there are such discrete acts, occur, or how they are entered into nature, or a lot of other interesting questions. But the cool thing about design is that you can look at the system right in front of you right now and conclude by how the parts are arranged that it is designed.

And then you can go and ask those other questions later. Great. Dr. Swamunas, a few questions along the same lines that popped up.

I hope we get a chance to ask each other questions too. Let me keep us on point for a moment. I think in your effort to be kind and winsome, some of the audience are like, wait a minute, do they really disagree? So, especially on this question of whether we can scientifically infer design, where do you really disagree with Dr. B? Yeah, so I think that when it gets into the details of the specific arguments, and I don't mean this with any respect, I think you're explaining it as you see it, Mike.

But when I see your argument from a scientific point of view, it looks like 1 plus 1 equals 3. Not to mean that it's elementary, but rather it doesn't add up, given what I know.

Does that make sense? One. Why is it? Well, part of it, I would say, is that argument that was made there? There's several points where I just have questions that I'd want to press into.

One is like, we already know that science is not intuitive, so why would we make an intuitive argument based like that? There's also a claim that the only way we recognize design is by purposeful arrangement of parts. But, I mean, I thought that actually minds were recognized by other ways. I mean, there's this idea of a proper basic belief that Planiga talks about, which is not by recognizing the purposeful arrangement apart.

So that's a pretty loaded philosophical claim that I don't actually know if even leading Christian philosophers would agree with. You kind of go down the list. And there's also scientific points we've disagreed on.

I'm not going to get into it now, but we kind of went back and forth about polar bears, right? Right, yeah. And I think that I couldn't follow along on why -- these are scientific details. I don't want to get into those details.

And so for a lot of those reasons, then, you know, I'm just kind of left full, you know, that doesn't actually work for me. And also notice, too, that we do actually have no problem recognizing design and biology from a secular point of view. And I think one of the missing distinctions here in ID thought is the distinction between divine design and creaturely design.

You guys get what I'm saying? What would creaturely design be? Well, so examples of creaturely design are a lot of things you point to, like Mount Rushmore. Humans created Mount Rushmore. My computer is a creaturely design.

You can go through what creatures do, people that were created by God, how we designed things, right? Or how even animals designed things, and that sort of stuff. But a key distinction in Christian theology is that, well, God is not -- he's like us, but he's not like us. And my natural expectation, actually, is that, well, if God's designing stuff, he's not doing it the way humans do.

A great example of this, actually, is the human genome. So a lot of times people in ID compare it to computer code, you haven't done this. Point point of course, ID means intelligent design.

Yeah, yeah, okay. There you go. A lot of people compare it to computer code, a language that has only been produced by mind.

They're free, yeah, yeah, yeah. But I'll tell you what. Well-designed computer code has comments.

[ Laughter and applause ] And so there's a point where, you know, if this is a computer

code, it is a computer code unlike any human computer code that has ever been made. And so, yes, there are similarities, but there's also very important and dominant strong changes of differences. And so how do we deal with that paradox of that there's some similarity to how creatures design, especially for selected, but only look at it from a narrow point of view.

But when you actually start understanding it in more detail, I mean, I'm a computer programmer. I heard that. I even agreed with that argument until I actually started learning more about DNA.

And then I also knew what good code was. Like, wait a minute. And to be clear, I'm not saying that God is a poor computer programmer.

[ Laughter ] Rather, what I'm saying is that DNA is like language. It's like a computer code. But it's also very unlike it.

And what we're saying is like if you just observe biology, you'll know. But the fact of the matter is that none of the stuff that we see in the slides is actually observing biology. These are things that people put on the slide and selected and put in front of you.

And so certainly those slides are designed. We're not looking at biology directly though. And then the question is like, what is actually biology? And sometimes it just doesn't look nearly, actually most of the time, it doesn't look anything like a creaturely human design.

And that doesn't mean it isn't designed. It's just not like a human design. >> Dr. E. E. E. response? >> Yeah, I'd just like to make a comment or two.

As Josh indicates, you know, I've been in this business for 25 plus years and Josh has been following at least for a few years. At least for a similar length of time. Lots and lots of points have been made and counterpoints and counter counterpoints and counter counterpoints.

And so that's why I put those websites on my last slide. For anybody who wants to get into the weeds, please, there's lots of weeds to get into. Feel free to go look up.

Let me just say that as you know that will be surprised to learn, I disagree with Josh that any of the arguments that he or others have brought up either touch the core of idea or are really hit the point or anything. And I've been in this business 25 years and my, and my, and my understand or my conviction that idea is correct is only gotten stronger and it's gotten stronger with the progress of science. And it's gotten stronger quite frankly by the extremely weak replies I've gotten from extremely smart scientists on how these structures can be explained.

And one other thing that I'm having trouble remembering is that, oh, yes, design. Now, if



God wanted to design something, it would have to be by the purposeful arrangement of parts. If God created the universe, which I think he did, and wanted life to occur here, why then he has some parts to arrange.

And we call those parts the laws of nature, electrons, protons, things like that. So in least in our world, I don't yet have any knowledge of how God works in, you know, heaven. But at least in our world, in order to see his design, we see a purposeful arrangement of parts.

If you see the Red Sea parting before an army, well, that's a purposeful arrangement of parts. And so that's the only way, and let's God somehow speaks to us directly. That's the only way we can recognize design and intelligence and purpose.

Maybe, again, I do want to make sure we clarify. So, Josh, I'll just take a real world example that probably happens tonight. There's a college student out here, and they saw the gears and the plant hopper leg, and it's a startling image.

And the college students gut response is to say, wow, that looks like design. Are you saying that is an okay thing to say, but not as a scientist? I think it really gets down to what we mean by design. So, what do you mean that God created all things, and there's beauty here? So the way how planet go would discuss it would say that this is a design discourse.

It's not a scientific argument, it's a proper basic inference. And so what I think is going with ID, part of the reason why ID is so resonant is that that intuition is God given, and it's correct that God did design everything. It's just that science doesn't work that way.

Science works by other means, and so when you actually start to now break it down from a scientific point of view, that correct, proper, basic inference doesn't actually work by the scientific way how you worked that out. And it comes down to details. So the thing about it is we have to think systematically scientifically.

So, yes, I entirely agree. That looks like a gear, but it's also different than a gear. And the way how we would rigorously approach this is to start not listing out all the ways that it's similar, but actually start listing out all the ways that it's different.

And the ways that it's different actually start to make very clear why it is we can't be, well, if it's designed, it's certainly not designed in this way, same way we design gears. And so that's definitely the case. And so this just becomes something where, you know, I think it's true.

God created all things. He foreordained for his purposes. He providentially governed the creation of those gears in that insect.

Exactly how, just like Mike, I don't know. But science doesn't actually have the tools by

which to tell us that. So I think we're kind of getting closer to the heart of the disagreement.

It sounds like you're saying that intuitive, properly basic, I see that those gears are amazing and I think that God designed it, but that's not science. It sounds like that's kind of the core of the discussion. It's just not how science works.

So the thing about it, that's a very intuitive thing. But science is about challenging our intuitions. So science over and over again is about, you know, there's a way that we see the world.

And science challenges our intuitions are intuitions end up being usually wrong. So, Mike, I mean, this is a common criticism level that intelligent design is that intelligent design is a show stopper, so to speak. Why did you say show stopper? Well, this is a common, this is a common.

Yeah, people do say that. So along these lines, would you defend the idea that intelligent design really is science and belongs in the science category? Absolutely. Okay.

And the reason is this. It's based on empirical observations. It's based on observation of the machinery of life.

It's not based on, wow, you know, how this happened, you know, must have been, you know, God, or we don't know what's going on. So God must have done. Look at us.

It's gears. But can I ask you? No, no, wait. Okay, sir, go ahead.

No, but I have a question on this one. Oh, yeah. It's gears.

We see that the parts are in relationship to each other for a purpose. And that's always in our experience the result of a mind. So that's one thing.

And the second thing is that we use the same logic to conclude design that we use for any other science. And that is inductive reasoning. Whenever we see a purposeful arrangement of parts and we know the causal chain, we always find that it's due to a mind.

Here, unexpectedly, we have found enormously purposeful and complex arrangements of parts in life. And again, as Josh told you, he can't explain where those gears came from either. And it's not Josh.

Nobody in science can explain it. Or they would have by now. They hate intelligent design.

Not everybody. But a large fraction of really smart scientists hate intelligent design. And for 25 years, people have tried to respond to it.

And you can take my unbiased word for it that none of the responses have laid a glove on it. So the point is that science might, as Josh says, discover some counterintuitive things, but some things aren't counterintuitive. And so you can't just say, oh, that's intuitive, so it's wrong.

But science has not come up with an explanation for these things. Darwin's theory was proposed in the middle of the 19th century when cells were not known, or they were known, but they thought to be little pieces of jelly. Molecules weren't -- nobody was even sure if molecules existed.

Now we found all this stuff, and yet by dint of inertia, this idea still plugs along. And ad hoc rules are brought up to stop anybody who wants to, you know, say the obvious. People will say, oh, design isn't science, or you can't think that, or you have to wait another 100 years, or, you know, so on.

So, yeah, I disagree. I think ideas is science. A lot of the questions that have come in have to do with, okay, if you're a Christian, how do you square what you're talking about with Genesis, with Adam and Eve, things like that? I know Dr. Beehey has been pretty intentionally silent on that topic for the most part, and Dr. Swamados just wrote a book about it, and it's not the main focus tonight.

One question that did come in for you, Dr. Beehey, is you mentioned the idea of disorder or residue that's left over, and I mean, we do see things in biology that seem not super designed, right? They seem like probably mentioned the virus earlier, like that's, so, so, can you speak to this question of disorder, the residue that you mentioned? Yeah, okay. Well, many scientists point to, as, as Josh did, pointed to neutral changes over the years as, maybe an indication of common descent, but unlike Josh's careful distinction tonight, a lot of scientists infer that common descent means the same thing as Darwin's mechanism, and they're not related. So, the mutations, the neutral mutations and other things might just be the residue of the molecular machinery that replicates DNA that is responsible for organisms surviving.

And let me just want to make one comment. I don't think the bacteria phage was poorly designed. I think it's wonderfully designed.

Whoa, you know, sticks its syringe right in that cell and takes it over. This business is not sentimental. You can't say, oh, you know, that looks, that looks mean.

How could a designer do that? Well, as land isn't a tame lion, did somebody say that? Viruses and phages might be doing things in life that we have no idea of. Almost all bacteria and almost all viruses don't care about humans. They don't infect us.

They don't cause disease. So, if you do, and that's the ones we focus on, but they're real important in the biosphere. So, you can't just say, oh, that looks dangerous or yucky or

that makes me sick and conclude then that it wasn't designed.

Nuclear bombs are not designed. Guns are designed. And especially in science, and I try to whack or wear my scientific hat all the time, in public.

You can't make moral judgments. You can't say the universe isn't allowed to be like this because that would be wrong. You have to say, what is it? What's our best evidence? What's the best idea to explain this evidence? Anything less is a betrayal of science.

If you say, I'm not going to go there because I don't like the universe to be that way. We're starting to run short on time, so I'll pose a question to Dr. Swamados. The way you describe how science works and how these inferences of divine design done necessarily fit in science.

A couple of people, the word "d" is jumped into their mind. The idea that maybe God exists and he can get things started, but he doesn't interfere with processes once things get going. Do you think that is related to deism or would you put it in some way? I do think that, if you look at how science started, it was started by, well, modern science and the way we understand it now, it was about 400 years ago, with the scientific evolution right after, you know, there's a lot of Christians involved in this initially, then it really became a lot more deistic and a lot more atheistic.

And even a lot of Christians that have been involved in the sciences have sometimes taken a much more deistic view. I'm not a deist. I have no problem with God involving himself in nature.

Like, let me just be clear. I just wrote a book talking about the Novo-Christian about him and Eve. I don't know if you heard that.

So you're not a deist. And so the issue is really about how powerful is science. Now some people see science kind of like the eye of Sauron.

And it can just, it can look into your pocket. It can look into your bank account. It's like wherever you want to tell you anything in the world that is important that you want to know, I can tell you.

And that's how most people, I think, seem to think about science, including scientists tend to present that view when they engage in the public for some reason. But I just found science to be profoundly limited. And so because I found science to be very limited, I found I just can't actually do a lot of stuff that we wanted to do.

And so I'm not really concerned when it can't give us a complete account of the world. C.S. Lewis talks about this. He says that science is, you know, it has a legitimacy, but it's like a dream.

In theology is the waking world where we try and make sense of everything together. So I think the really interesting question is to think about why is it that we live in a world that has viruses and even cancer that looks like it has design? Why is that? What does that mean theologically? And I think there's some really interesting questions there to get into. And this is not at all an argument against God.

I believe in God. I think that God created all things in the sense he designed everything. But I don't actually really think that those sorts of questions are really approachable from science.

Good. So I'm going to do two more questions, one for each of our speakers, and then I think we'll be done. It's 841 right now.

We ask some questions of each other. Any chance? My job to keep us on point. So I'm going to keep us on point.

There are so many audience questions. We cannot even remotely get to them all. So for Dr. Beehee, one quick question, you mentioned that like I'm not going to talk about whether the neo-Darwinian mechanism can account for things because people kind of left it behind and gone through this third way.

This third way of evolution you had in one of your slides. The students are asking, "That's not really what I hear in my classes, so what's the deal?" Great. You probably have pictures of Stanley Miller and your textbooks too, the origin of life experiments.

Well, textbooks are notoriously slow to keep up with fast moving fields unless there's a lot of money involved. And Darwinism is the default materialistic view. Even if you're a proponent of the third way, it's been my observations.

When push comes to shove and somebody says, "So you're saying we don't know how this got here, but wagons will be circled and people will, newspapers will report, and even textbooks will report that everybody agrees that Darwin got it right." That's simply not true. So one thing to keep in mind is that textbooks are happy to tell students false stories about this area. They will push them to make conclusions that scientists know are open questions or that we have in a clue about, they'll say, "Yeah, okay, we don't know yet how life started, but many scientists think that there was this." And the kids are given a false impression of the state of science.

Dr. Swoman, I wanted to ask you, you and I spoke a little bit last night in the name of today, just judging from the questions and from conversations I've had with students, a pretty healthy chunk of the people in the room come from some sort of young earth creationist background. I know you've had very fruitful conversations with folks from that background, so I know we don't have a lot of time, but what would you say to folks who are coming from that perspective? That's really easy. Just remember Proverbs 4-7,

maybe you think that we're both crazy for a man like an old earth and come and descend.

That's okay. You don't have to agree with this, but follow Proverbs 4-7 that says to seek understanding. There's, you know, understand what you disagree with.

There's no harm in understanding it. You can still disagree with it, seek understanding. And if you're a student, you don't have to come out and fight for anything.

God doesn't need your defense. There's nothing here that threatens him. You can disagree with everything we said, and you can feel threatened, but that threat is an illusion because God is not threatened.

Trust in Him. Jesus is the cornerstone. And understand, seek understanding.

I think that's a good note to end on. Why don't you join me in thanking our speaker? [Applause] 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)