

- Joanna: [00:03](#) Our guest today is Rick [Lindroff 00:00:04]. He is a professor of ecology at the University of Wisconsin in Madison, and his research focuses on evolutionary ecology and global change ecology in forest ecosystems. I can see that on the top of an academic paper, Rick. That's a mouthful.
- Rick Lindroff: [00:16](#) Yeah.
- Joanna: [00:17](#) He has been a Fulbright Fellow and is a fellow of the Ecological Society of America, and the American Association for the Advancement of Scientists. And we have gotten to know Rick through an organization called [Biologos 00:00:28], which is a body of Christians working in the sciences who are passionate about communicating the harmony between the Christian faith and science. So welcome, Rick. We're thrilled to talk to you today.
- Rick Lindroff: [00:39](#) Well, thank you for having me. I'm really pleased to be here.
- Speaker 3: [00:43](#) Rick, that's the ... There's the formal introduction. I'd be curious related to that, tell us briefly about how your career interests in ecology developed over time, and then maybe specifically what it was about climate change and forest ecosystems that really captured you.
- Rick Lindroff: [00:59](#) Sure. I grew up in Illinois, northern Illinois, as what I characterize as a free range kid. When I was seven, my family moved to the country, and I spent every non school hour, non school and non sleeping hour, roaming around in the fields and the forests and the ponds around our house, land that interestingly later became home to the National Fermi ... Fermi National Accelerator Laboratory, there we go. And my parents were very forgiving. They would let me bring home everything from lizards and snails and snakes to chipmunks and try to rear them in my room. So yeah, it was quite the childhood. And-
- Joanna: [01:44](#) Did you ever have a pet rabbit?
- Rick Lindroff: [01:46](#) We did, actually have pet rabbits.
- Joanna: [01:47](#) Yay.
- Rick Lindroff: [01:48](#) Yeah. And dogs, and you name it. And interestingly, it's been shown that the age of seven to 12 are really a critically important period of a person's life in establishing nature connection. And it's during that time that nature was actually

imprinted on my heart and on my soul. So I knew from the time that I was seven that I wanted to be a biologist. I went to Iowa State University and studied wildlife biology as an undergraduate, and there I learned I was actually more interested in the science of ecology. So I pursued that with a PhD at the University of Illinois, moved from there to the University of Wisconsin, where I've been my entire career.

- Rick Lindroff: [02:33](#) I love being in forests and forest ecosystems, so yeah, chose to work in them. And it was initially, I'd say the early 1990s, that I started studying the affects of atmospheric change, such as enriched CO2 or high levels of ozone, as well as climate change on ecological interactions. And from that my interest has expanded, certainly as the severity of the climate change problem has grown, to include some of the human dimensions as well.
- Rick Lindroff: [03:04](#) I should say I'm not a scholar, I'm not an academic on the human dimensions of climate change, but I've studied it pretty extensively and have spoken in a number of places about that.
- Joanna: [03:15](#) Rick, one of the questions we ask almost anyone who comes through the doors of Denver Institute is how their faith informs your work, and I would love for you to answer that question for us, but I'd also like to know how did you work and form your faith?
- Rick Lindroff: [03:27](#) Okay, sure. Yeah, it's pretty common, as a Christian working in the area of science, that people want to know how does my Christianity inform my science. And my first response is that in most ways, or in many ways at least, it doesn't. My approach to doing science is the same as non religious people. So I read the literature, I develop hypotheses, I write grant proposals, try to get people to fund my research, I design and conduct experiments, analyze results, publish them, attend scientific conferences, and then repeat.
- Rick Lindroff: [04:07](#) That is the same as my colleagues, but I think what my Christian perspective helps me to bring to my science is things such as an attitude of awe and wonder. Understanding God as creator and sustainer enhances the awe and wonder of science. I really like Psalm 111 verse 2, which says that God ... That great are the works of the lord, they are pondered, that is sought out by, all who delight in them. I really see that as integral to the work I do as a scientist.

- Rick Lindroff: [04:42](#) Also my faith means that my research group is values driven. We're very intentional about a shared set of values. We post them on our website. We recruit people to join our group who can make those values their own. And those values are things such as integrity, wonder, community, and communication.
- Rick Lindroff: [05:04](#) Another thing that my faith does is it helps me to develop emotional intelligence. Science is fundamentally a human endeavor, and working successfully with people, whether they're students, technicians, collaborators, other faculty, requires some level of emotional intelligence. And because of my faith perspectives, I feel more compelled to value people than I would without that faith perspective, and I've made intentional efforts over the years to understand who I am as a person and what drives me and how I can better connect with and understand people.
- Speaker 3: [05:42](#) I love that.
- Rick Lindroff: [06:42](#) And then ... Those are a few things. Maybe the last thing is that my faith is a really good guard against my own fallen and corrupt nature. With the possible exception of my wife, nobody really knows how fundamentally flawed a person I am. And I'm in a career, unfortunately, that really glorifies personal achievement. So every day I struggle with idolatry of career, with pride, with excessive ambition, fear of failure. And my faith perspectives help alert me to those realities and provide needed checks for my soul.
- Rick Lindroff: [06:21](#) Those are some ways that my faith influences my science.
- Rick Lindroff: [06:25](#) And then, you asked for the flip side, right?
- Joanna: [06:27](#) Yeah.
- Rick Lindroff: [06:28](#) That's interesting, because rarely do people ask about how does my science influence my faith. I guess they just don't think that it possibly could. But I think it does in many ways, and I've said before, I think that I'm a better scientist because I'm a Christian, but I equally am a better Christian because I'm a scientist. And I'll touch on two reasons why.
- Rick Lindroff: [06:51](#) The first I would say is a commitment to truth. The very same commitment to pursuing truth that directs my work as a scientist I think really enriches my life as a Christian. No matter the consequences for various cherished ideas, and no matter

where the truth leads, I try to follow that. And I take some comfort in the reality that although I really like simple and direct answers, the truth is typically not simple and it's rarely direct. So that's helpful.

- Rick Lindroff: [07:26](#) The second thing is this attitude of humility. Humility derives in part I think from a proper perspective of oneself in the context of greater things. And one surefire way to develop it is to bump up, day after day, against the limits of what I know or of what anybody knows. So humility helps me to embrace rather than reject mystery.
- Rick Lindroff: [07:55](#) There you go. A couple of thoughts on how my scientific perspectives influence, and I think enrich my faith.
- Joanna: [08:01](#) That's so cool.
- Speaker 3: [08:03](#) Yeah, I appreciate your reflections, Rick. There's a real groundedness to that, and I think that there's ... I was a biology major undergrad and got my master's in exercise physiology, and I think in a similar way, growing in comfort with how much I don't know in those pursuits was really, really good for me in my faith. I grew up in a tradition that was knowledge equals maturity, to be quite frank.
- Rick Lindroff: [08:31](#) Right, right.
- Speaker 3: [08:32](#) So science was really informative for me, in we don't know everything, we're consistently learning, and that brought just plenty of freedom to me in my faith journey over the years, especially my later 20s.
- Rick Lindroff: [08:43](#) Yeah. I agree with that. One other thought along those lines is that I think this attitude of humility and pursuing truth helps me with some considerable levels of cognitive dissonance I have at times. In other words, those attitudes help me to hold in my head multiple conflicting views without demanding resolution. And so I can have these things floating around in my head, and I don't know which one is right or which one is true, but I am not demanding that they resolve so that I can feel comfortable.
- Joanna: [09:17](#) Yeah. That's powerful, Rick, because I think in the Christian community at times, we've had a very fearful interaction with science because we are afraid that doubt or areas of uncertainty will somehow threaten some of the core foundational concepts of Christianity, and I don't think that has

to be the case. As I've interacted with you and with other members of the Biologos community, I sense that you guys have an unwavering commitment to Christ, to the role of scripture in your lives, and growing with God, serving him. But you also are able to engage some of the most controversial scientific principles of the day. Just like you said, because you're okay with a little bit of cognitive dissonance.

- Rick Lindroff: [09:54](#) Mm-hmm (affirmative). Mm-hmm (affirmative). That's correct.
- Speaker 3: [09:56](#) Yeah Rick, let's lean in a little bit to something that is, at least, really known and personal to us that overlaps with some of your passions and research. We're recording this from Colorado today. But I think I could point to something that other people may have seen in other places. We're really well known for beautiful, huge stands of aspen forests. And there is, people travel to and through our state just for the changing of the aspen leaves every fall, and just the changing of the leaves, the biology behind that is entirely fascinating to me. But I'm really curious if you could offer some reflections in terms of the importance of aspen groves, and how climate change is potentially impacting them in our ecosystems.
- Rick Lindroff: [10:42](#) Sure, yeah. I will say aspen is my favorite tree species, and I've used it in my research for like 30 years. It's really a tremendous species in many ways. It's the most widely distributed tree species in North America. And some of those clones that you're speaking of out west are considered to be thousands, maybe even close to 10,000 years old. So it's really a very remarkable species in many ways.
- Rick Lindroff: [11:13](#) But unfortunately, we know that in the inter mountain west and western United States it's also in pretty significant decline in many areas. And that's a consequence of multiple things. But there's this phenomenon known as a general die back which has been occurring for decades. And a number of studies points to the cause being over browsing by large ungulate things like cattle, sheep, deer, and elk.
- Rick Lindroff: [11:50](#) In many areas throughout the west, aspen, which regenerates by sending up suckers from its shoots, and rarely, but occasionally, by seeding events, it just keeps getting browsed or eaten into oblivion, and then the older ramets, or the older trees, get older and older and older, and eventually they die of old age, and they don't have younger trees to replace them. And that's why you see throughout western Colorado, and I've

traveled pretty extensively through there, occasionally groves of aspen that are decrepit, their trees are falling down, and there's nothing [inaudible 00:12:26].

- Rick Lindroff: [12:25](#) That's a consequence largely of too much browsing by large browsing mammals. But starting in probably the '90s and certainly in the early 2000s, we started seeing another phenomenon where apparently healthy aspen groves or stands would go from healthy to dead in a period of just a few years. And that phenomenon was christened SAD, or Sudden Aspen Decline.
- Speaker 3: [12:57](#) Someone was creative there.
- Rick Lindroff: [12:59](#) Yeah, right. And it is sad.
- Speaker 3: [13:01](#) It is.
- Joanna: [13:01](#) It is.
- Rick Lindroff: [13:02](#) It's very sad. And the causes of this decline have now been identified to be the long, extensive, and serious drought, hit much of the west, especially Colorado, Utah, and areas like that, from the early 2000 aughts to the later 2000, seven, eight, nine, 10. And that was coupled then with a loss of resistance in those trees to pest attacks and the emergence of an entirely new pest problem vectored by beetles that, very similar to what they do with pine trees, will burrow into the bark and wood of aspen, and they bring in a fungus that then clogs up the vassal transport system and the trees will die.
- Rick Lindroff: [13:47](#) That's a much more recent problem and has certainly been exacerbated by climate change, because of the drought conditions.
- Speaker 3: [13:57](#) You had alluded to the, particularly the bark beetle, and if you were driving in the hills and mountains here in Colorado, you would see particularly in pine, lodge pole pine, spruce trees, you can see the very obvious look of what's beetle kill. It is this maroon, still standing trees that are maroon, very dead, and branches ... Now it makes gorgeous blue gray furniture after ... We developed quite a cottage industry.
- Rick Lindroff: [14:28](#) Yeah, I'm sure.

- Joanna: [14:29](#) It's a style statement that we've turned out of our ecological problems.
- Speaker 3: [14:31](#) So sadly, maybe there's some beauty coming out of the degradation. But nonetheless, there's a lot of states that are experiencing bark beetle infestations of trees. Relate that particularly, just briefly, how does that work with regard to increasing temperatures, or climate change over time?
- Rick Lindroff: [14:49](#) Right, yeah. I'm familiar with what you're talking about. I have several relatives who live in Colorado, and it makes my heart sink when I see that. First of all, we have to realize that bark beetles and pine trees have always had this conflict going. So this is nothing new. But what is new is the environment in which they are doing it. What climate change has done, has, because not so much of temperature but drought, has weakened the defense systems of the pine trees in particular. And that allows these infestations to take off initially.
- Rick Lindroff: [15:29](#) Once they take off, the populations of beetles become so high, they become so numerous that they can overwhelm the defenses of even healthy trees, and then you get these expansive outbreaks. So that's one factor, is that the tree's defenses are weakened. And that's due to drought. But where temperature comes into play is that we know that historically at higher elevations and higher latitudes, it took to years for the life cycle of this beetle to be completed. But now it's taking one year. Their populations can grow much more rapidly.
- Rick Lindroff: [16:12](#) We see, in this case, that climate change is not introducing a new threat, but it's a threat multiplier, just like it is for forest fires or hurricanes or national security. So it's amplifying what is happening naturally and making it much more expansive and serious than has ever been seen by humans in North America.
- Speaker 3: [16:40](#) We'll talk a bit more about climate change and maybe some larger response to that in a minute, but thinking specifically, do you have any short term hopes for these trends that you're seeing inter mountain west forest systems with regard to climate impact? There's obviously the need for larger effort, human effort, to reduce human caused climate change. But are there shorter term hopes beyond the great winter freeze that's gonna knock out all these beetles? Anything else? We've been dreary here.

- Rick Lindroff: [17:08](#) Right. Unfortunately, the beetles are a problem that probably can't be addressed effectively by human measures. Like I said, historically there have always been beetle outbreaks and deaths of pine trees. One of my colleagues here at the University of Wisconsin is probably the world's leading authority on bark beetles and western forests, and he likes to tell me that western forest trees never die of old age. They die of beetle attack or they die of fire, that's it.
- Joanna: [17:42](#) Wow.
- Rick Lindroff: [17:43](#) And of course, both of those are being exacerbated by climate change. But what is different now than it had been historically before human inhabitation of the west is that the forests used to be much more of a patchwork of different ages of trees, and because of fire suppression throughout the 1900s, our forests now are expansive homogeneously common age stands of lodge pole pine, or ponderosa pine, that are just ripe then for these types of outbreaks to occur. And there's really not ... There are no good ways to slow them down once they start. They just have to eventually run out of food. But unfortunately, it's gonna take 100 years for those forests to come back.
- Rick Lindroff: [18:29](#) When I see that happening out west, I get a pit in my stomach. It's a very, very sad thing to see.
- Speaker 3: [18:35](#) We'll just have to apologize to our children. I'm feeling sad. I'm gonna go home and tell my daughters tonight that we're sorry that they won't see what we see, and their kids won't, anyway.
- Rick Lindroff: [18:44](#) Right.
- Joanna: [18:45](#) Rick, I'd like to know, for our listeners, we're hosting an event on April 4th called God, Energy, and the Environment, and Rick will be our keynote speaker at that event. But what we're talking about is both the reality of climate change and also how elements of climate change effect the Colorado economy where energy is such a huge driver, both renewable and oil and gas. But Rick, I'm curious to know, as we were preparing for this event, I've been talking to a ton of people about climate change, and I've been astonished within the faith community at the diversity of perspective and how many people I actually respect will say, "Well, I'm not so sure if that's really an issue or if we should be too worried about it." And you've been very clear. You said the science says climate change is a reality. But outside

of the science, why do you think the Christian community is so hesitant to accept climate change as a reality?

- Rick Lindroff: [19:39](#) That's a really good question, and we could spend hours talking about it. But I'll give you a few quick comments. Let me precede those comments though by saying what the science says about climate change.
- Joanna: [19:53](#) Yeah, please do.
- Rick Lindroff: [19:53](#) And this is uniformly accepted in the scientific world, I don't care what you hear otherwise. In the scientific community, we say it's real, it's us, it's bad, it's going to get worse, but there's hope if we act soon. That in a nutshell is the situation we face.
- Rick Lindroff: [20:17](#) Now, as you mentioned, Christians, conservative or evangelical Christians in particular have a diverse range of views. But generally they don't see this as a problem. In fact, I was just reading this morning a publication from Yale University, it was put out just a few years ago, that demonstrated that among American Christians across the board, fewer than 10% feel that climate change is a moral or a religious or a spiritual issue. It just doesn't come across their radar.
- Rick Lindroff: [20:54](#) I think there are a number of reasons for that. I think one is simply bad theology. We don't take seriously God's very first command to humans, and that is to take care of his creation.
- Joanna: [21:05](#) Amen.
- Rick Lindroff: [21:06](#) And then, also under the heading of bad theology, we tend to have a view of the redemptive work of God that stops with humans. We don't fully comprehend that God is set about to restore everything. And that he's called us to participate in that worldwide restoration project. So those two things coupled together, a bad understanding of who God is as creator, what he made us to be to come alongside him in his work of redemption and restoration, I think contributes to this nonchalant attitude about climate change.
- Rick Lindroff: [21:46](#) Another reason, besides bad theology, is I think co-opted world views. Christians like to pride themselves on having a core Christian world view. But I think we're often times not very cognizant about how those world views have been co-opted by a culture of consumerism, and by politics. And in fact, a number of people I know and interact with on a regular basis really

cannot differentiate Christian theology from political perspectives.

- Joanna: [22:19](#) Oh my god.
- Rick Lindroff: [22:20](#) There's so ... Yeah. They're just so tightly intertwined that they actually view politics as theology, and at times theology as politics.
- Rick Lindroff: [22:31](#) That's, I think another problem. Another reason that Christians, especially I would say conservative or evangelical Christians don't see this as a problem, has to do with age and conservatism. It's interesting that white evangelicals have the highest rate of climate change denial among all Judeo Christian groups. That has led some people to infer that the theology of white evangelicals is at fault. And as I just said, yeah, there's some evidence to suggest that might be the case. But the interesting thing is that further study by social scientists has turned up some interesting findings. What that work has shown is that climate denialism by especially evangelical Christians is not related so much to a white evangelical theology, rather it's related to being old and conservative.
- Rick Lindroff: [23:32](#) What you have here is-
- Joanna: [23:34](#) [crosstalk 00:23:34] to our old conservative listeners.
- Rick Lindroff: [23:35](#) Yeah, which applies to me, right? Well, maybe not the conservative part. But old. It just so happens that white evangelicals are generally old and conservative. So what we have here in a statistical sense is what we call co-linearity. That is, it seems to be due to one factor, but it's not necessarily due to that factor, it's due to another factor that is correlated with the first.
- Rick Lindroff: [24:01](#) I think the last thing I was gonna say about why it's a problem is trusted thought leaders. If I have a question about what is a proper scientific perspective on some issue, I go to the scientific agency that is responsible for holding the information on that. So if I was to for example have a child that came down with leukemia, first thing I would go to is the National Institutes of Health to figure out, okay, what is the correct status of information? What do we know?
- Rick Lindroff: [24:34](#) By and large, Christians don't do that. Their trusted thought leaders are not scientists and they are not scientific agencies.

They are of course pastors, and certain radio hosts, et cetera, that they follow. They turn to those thought leaders to help inform their perspectives rather than the thought leaders of science.

Rick Lindroff: [24:56](#)

Those are some ideas about why this is an issue.

Joanna: [25:00](#)

Yeah Rick, I always come away from these conversations and think to myself, we need more deeply devoted followers of Christ working in X industry. But again, a call to Christians to go into the sciences, and be incredibly talented, excellent, and loving God in the midst, so that we do have authoritative thought leaders that can speak to science.

Rick Lindroff: [25:21](#)

Right. Absolutely. In fact, I always remember a mentor that I had when I first started my career at the University of Wisconsin decades ago who was a very lovely Christian, devout Christian man, and we're talking about this ... His admonishment to me as a new faculty member was to establish my credentials as a scientist and as a faculty member first. And then let whatever Christian witness there is follow. So yeah, to have a voice in this community, I think you need to be respected first and foremost as a good scientist.

Joanna: [26:01](#)

I'm curious, Rick, because I had a conversation at a restaurant with a friend about climate change, a fellow Christian, and was asking this person's opinion. And they looked at me and said, "You know, I've done a ton of reading, and I really don't think it's a major issue that would demand us spending billions of dollars to respond to." And to be honest, I didn't know how to continue the conversation. I just let it drop, because I didn't wanna hurt my relationship with that friend, and I honestly did not know how to engage it. So how do we cross that divide when we have such differing perspectives on an issue like this?

Rick Lindroff: [26:38](#)

Right. First thing I try to determine is whether a divide exists because of misinformation or a lack of information. and if the person I'm speaking with really is interested in learning more. Generally that's not the case. Generally, it's not lack of information, and generally they're not wanting to learn more. But also generally, the scientists don't understand that. And we have a fault of when people push back or deny the science, we come on with both guns blazing and dump massive amounts of data and science onto them, somehow convinced in our own minds that once they see the data, they will change their own minds. And that's the catch. More recent research on the

science of science communication, related research, has shown that that's not the case at all.

- Rick Lindroff: [27:43](#) Let me take a bit of an aside here and talk a little bit about how is it that we incorporate new information into our belief systems. Again, most of us think that we're enlightened people, and that we first and foremost carefully assess the facts, and if the facts are true, we incorporate them into our beliefs and values, and if they're not, we reject them. So that's perspective most of us have, and we're wrong. We really don't.
- Rick Lindroff: [28:13](#) What research in the areas of moral psychology and sociology is telling us is that we're primarily intuitive and not rational. So when we're faced with a body of new information, we first intuit what we want to believe, and then we use our reasoning faculties to provide justification for that intuitive response. I'm going to give an example here, and it involves our president, and I want to be really careful here, this is not a partisan or political statement, it's just such a great example.
- Rick Lindroff: [28:49](#) In November, the fourth National Climate Assessment was released. It's the product of 13 federal agencies, 300 scientists, with scores of additional scientists who reviewed and evaluated it, and was produced under two presidential administrations. And it said that climate change is real and we are already experiencing serious consequences of it, and those consequences are going to get worse. Within a day or two, our president was asked what he thought about the predictions that climate change would hurt the economy. And his response was, "I don't believe it."
- Rick Lindroff: [29:31](#) Okay, so I really like that as an example because it shows that we respond not by a careful assessment in the evaluation of the data. We respond with our gut. And if we are faced with new information that doesn't somehow fit our moral framework and foundations, we reject it, no matter whether it's true or not. So it's not really a matter of truth, it's a matter of how does it integrate with my identity as a person?
- Rick Lindroff: [30:02](#) Unfortunately, environment issues for decades have been addressed from a perspective that resonates with liberals but doesn't resonate with conservatives. And moral foundation theory tells us that liberals and conservatives use somewhat different building blocks to assemble our moral foundations. Things that ring true to liberals are things like care and fairness.

Those that ring true with conservatives have to do with loyalty and sanctity.

- Rick Lindroff: [30:37](#) What I think we need to do, and I'm coming back around finally to Joanna's question, is identify where the people we are speaking to are coming from, and speak ... First of all, connect to their values, and then speak to them in ways that they feel that their identity and their tribal affiliation is not being threatened, and that they are given simultaneously information that they can then incorporate into their values and adjust.
- Rick Lindroff: [31:09](#) There's a lot there. But you think about it, there is absolutely no reason why there could not be a cogent, scientifically accurate, cohesive, conservative narrative on climate change. There's no reason there couldn't be. But there isn't. They've just given that over to the denialists. But there could be, and it could link to things like let's make the environment great again. Or, the sanctity and the purity of a healthy world. Or care for our children and our grandchildren.
- Rick Lindroff: [31:46](#) Those types of perspectives would ring true, and I think in communicating very serious issues such as climate change, which it is, we simply need to package it and frame it in a way that resonates better with the people we're talking to, and not just dump data on them.
- Speaker 3: [32:04](#) Yeah, that's really thoughtful, Rick. I remember when that was released, I remember some of the contention around our president's comment on that. And one of the interesting things, there's even a potential appeal, to your point, on the development of a more robust economy as a part of the argument in favor of considering climate change and impacts, both the protection of and the expansion in new sectors, whether those are energy sectors or new economic considerations. So it feels like another missed opportunity on that as well from these conservative or more liberal traditional platforms, as you're addressing. That's really thoughtful.
- Speaker 3: [32:37](#) Here's a, maybe a parting question. And you started to speak to it earlier. But I think you were preaching a minute ago. I was about ready to pass the plate here.
- Rick Lindroff: [32:47](#) I probably was. I was getting amped up.
- Joanna: [32:49](#) Preaching.

- Speaker 3: [32:50](#) I was getting fired up. But let me ask you maybe just a bit more formally to address, from the motivations of a believer, what would you tell them, why should Christians care about climate change, from their own biblical and theological perspectives?
- Rick Lindroff: [33:06](#) Sure, sure.
- Speaker 3: [33:07](#) What ought to animate us, if we can think together on this?
- Rick Lindroff: [33:11](#) Sure. Yeah, okay. So first of all, I think there's a clear command from scripture that we're to take care of creation. And climate change is having worldwide, very significant, negative impacts on the Earth around. So that's one. Biblically, it's also that we are to love our neighbor, and especially those who are disadvantaged, or living in poverty, or living under various social injustices. And we know that climate change is not affecting all people equally. In fact, it affects those who are living in poverty the most. In caring for our brothers and sisters, I think we also need to address the issue of climate change.
- Rick Lindroff: [33:55](#) But fundamentally, climate change is, in my perspective, and that of many scientists, those working on it, it is a huge problem. It is going to be very impactful no matter what we do. And we really have three ways to respond. We can mitigate, that is we can reduce the amount of fossil fuel burning and reduce greenhouse gas accumulation. We can adapt, so we can create drought resistant crops, and we can move our cities inland. And the third is we can suffer. Those are really the only three options before us.
- Rick Lindroff: [34:40](#) What we want to do is to emphasize the first two so that the amount of suffering is as minimal as possible. But even if we stopped emitting CO2 today, the earth is going to increase by at least another half degree, and cross us over into the danger zone of what is predicted to be safe temperatures for this environment, for our environment in this century. So we're really teetering on the cusp of what could be some very serious climatic disruption. We've already moved into a new climate environment that humans have never experienced before, and there is no going back. We will not go back [inaudible 00:35:25]. And the real seriousness is that we only have 10, maybe 15 years to deal with this in a very substantive way if we're not going to face catastrophic climate change in this century.

- Rick Lindroff: [35:40](#) So yeah, if we love our children, if we love the earth, if we love our fellow humans, for all those reasons I think we need to address it.
- Speaker 3: [35:49](#) I appreciate that, Rick. And maybe another fourth option is if we mess up this section of the earth, we can move out to another corner of the flat earth if we've ...
- Rick Lindroff: [35:58](#) There you go, there's that flat earth. You're right.
- Speaker 3: [36:00](#) We should retain my cynicism as a fifth option. Here's a closing, maybe a closing remark from each one of us. Rick, what's one thing that you'd like our listeners to do based on the discussion we've had today? And then Jo, I'd love to hear your thoughts as well.
- Rick Lindroff: [36:16](#) I guess I want to leave the listeners not feeling completely depressed, but with the thought that there is hope. And it simply requires us to act aggressively and rapidly. St. Augustine once wrote that hope has two beautiful daughters. One is named anger, and one is named courage. Anger to see the things as they are, and courage to see them and change them so that they don't remain as they are.
- Rick Lindroff: [36:56](#) The one thing I would ask all listeners to do is to start to evaluate their own lifestyles, and then to think about how we can be living with a softer footprint on the earth, producing less carbon. But then transferring this up the levels of organization, from individuals to faith based communities to schools to corporations, ultimately to governments. It's gotta transcend all of those levels of human organization.
- Joanna: [37:22](#) Yeah, I've been thinking too, in how I would answer this question, and I would invite our listeners to examine the underlying beliefs or perceptions that they bring to the sciences, particularly to the issue of climate change. Because as Rick had highlighted, so many of the reasons why people are not engaging science is that they're influenced by non scientific sources. So I would encourage listeners to dig in, like where would my suspicions of the sciences come from, why would I choose to value other sources over listening to a thoughtful Christian scientist on this issue? Just to understand maybe some of the factors that are shaping people's pre-conceived ideas that are keeping them from fully engaging the issue.

- Joanna: [38:05](#) I wanna be respectful as I say that, but I think it's powerful to look more deeply at why aren't evangelicals willing to dig in on environmental issues. Because when you identify what those factors are, it's easier to say, "Oh, maybe these don't deserve the credible weight that I've been giving them."
- Rick Lindroff: [38:23](#) Right, right. That's really good.
- Speaker 3: [38:26](#) If there's ... Yeah, I think if there's ... Mine is probably related, Joanna. If there's one thing I'd want listeners to do, it would be to think about some of the foundations in their belief system or their theology that might be driving their understanding of sciences. To be frank, a few of the different answers that you gave on why we should care just a minute ago, Rick, they're really beautiful and they're appropriate, but social justice, care of the least of these, poverty alleviation, would never have made my radar. But in part because I grew up in a tradition that had a very high emphasis on the redemption of individual souls, and you alluded to this earlier, but if Christ is truly redeeming all things, it means redeeming a person in relationship with God, with themselves, with one another, with systems and structures in society and with the created order. With the world around us.
- Speaker 3: [39:21](#) I think, for all of us, I would want us to just examine what are some of the preconceived theological assumptions we have, and are they right? Do they need to be shaped or adapted, just so that ... I think that you've exemplified and modeled that for us even today pretty richly.
- Rick Lindroff: [39:36](#) Thank you.
- Joanna: [39:39](#) Mm-hmm (affirmative). I love it. If you want to hear more from Rick Lindroff and have a conversation also about how we think about the economic tensions of living in a state like Colorado where the energy economy is a huge part of what makes this state go, join us April 4th for God, Energy, and the Environment. We'll be hosting at the Alliance Center, which is in the Union Station neighborhood, and you can find more information about that event at denverinstitute.org/events. We hope you'll come. I think it's gonna be a rich conversation.
- Joanna: [40:07](#) And we'd love to hear from you. So email us at podcast@denverinstitute.org with questions, thoughts, ideas. You can leave a review of the podcast, podcasting platform of your choice, and we would love it if you would subscribe to the podcast. Leave us a review, get your weekly or biweekly



updates about what we're talking about, tell a friend. It's a fun, fun conversation. We'd love to have you be a part of it.

- Joanna: [40:32](#) Thank you Rick for joining us. I can't wait to see you in person in a couple of weeks.
- Rick Lindroff: [40:36](#) I'm really looking forward to it, and thanks for the invitation to be here today.
- Speaker 3: [40:39](#) Good to be with you today. Thanks.
- Rick Lindroff: [40:42](#) Thank you.