

# The Future Is Calling Us to Greatness

with Michael Dowd + 56 Experts



## Peak Everything as a Blessing

with Richard Heinberg

Big ideas from this session:

- The End of Growth, Snake Oil, and Peak Everything
- The mission and message of Post Carbon Institute
- Resilience.org as a one-stop shop re responding to the future calling us to greatness

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Michael: Richard, thank you so much for accepting my invitation to participate in this conversation series *The Future is Calling Us to Greatness*.

Richard: Great. Happy to be talking with you.

Michael: I knew that I wanted you to be part of this. I've been a fan of your work for a decade now, as you know. When I first read *Powerdown* I think was my first introduction. Have since read I think four of five of your books.

Most recently actually I was thrilled to find that *The End of Growth*, actually you introduced me to another person who's become a major person in my life in terms of intellectual ideas and that sort of thing, John Michael Greer.

Richard: Great, yes.

Michael: You recommended him in *The End of Growth* and I listen to audio books a lot. Then I checked him out and I've read a half a dozen of his books. I had a wonderful conversation with him in this series as well.

Richard: Terrific, that's great.

Michael: Thank you for that. Let me just overview what we're doing here. I specifically wanted to have conversations with people like yourself who get the big picture, who get the challenges coming down the pike and who are helping people to not just prepare for it in the negative sense but see the possibility that is inherent in this, what a post-carbon economy, what a

post-carbon world for example would look like, how to stay inspired to be in action in the face of huge challenges and that sort of thing.

What I'd like to do at the start is just invite you because some of our viewers and listeners may not be familiar with your work. If you could just toot your own horn, share what it is that you particularly focus on, what your field of expertise is and how did you come to the place where you are now.

Richard: Right. I'm basically a writer. I have taught a college program on sustainability but I don't have any credentials as an ecologist or whatever. I just do what I do. I became a writer because I was fascinated with some of the big questions, ones that you talked to other folks about, how did we get into this fix, how come we're destroying the biosphere at a record rate and what can we do about it.

I've been writing books on environmental issues for 20 years now. My 12th book is all lined up and ready to come out in a few months. Mostly I've focused on energy issues. I started with the question why the industrial revolution. A lot of folks have analyzed that from the standpoint of economic history and the history of technology and so on. All those things are useful.

The one thing you need to know if you're going to understand the ferocious economic expansion of the last couple of hundred years is fossil fuels and the economic benefits of fossil fuels, the fact that they're energy dense and concentrated. We've never had anything like them before. It's energy that enables stuff to happen. Without energy we can't do anything.

Having lots of cheap, concentrated energy and we developed the tools to use that energy, that's what the industrial revolution was all about. That enabled planes, trains, automobiles, television, you name it. The modern world is a result of that but there are a couple of problems with fossil fuels. One is that they're non-renewable.

Therefore by definition we're running out with every drop we use. We've used them using the best first or the low hanging fruit principle, so we got the best stuff early on in the 20th century. Now the 21st century is all about diminishing returns on investment in energy from fossil fuels. That's behind all the headlines as far as energy is concerned.

The other thing about fossil fuels is burning them releases carbon dioxide, changes the climate and reduces our survival potential as a species. Getting off of fossil fuels is our task for the 21st century.

There are lots of other things we need to do but if we don't do that this is as far as we go. That's basically what I write about. That's my mission. I work for an organization called

Post Carbon Institute, which is headquartered here in Santa Rosa, California. It's a non-profit think tank.

I have the job description of Senior Fellow with the Institute but we have 30 other fellows with varying expertise and we try to look at the whole sustainability dilemma of humanity in the 21st century from every possible angle and look at how we're going to make this transition to a post-carbon future in as peaceful and happy a way as we possibly can.

Michael: I'm glad you mentioned that because that was one of the books that I read most of, many of the chapters in *The Post Carbon Reader*. I found the breadth of it, because of course you edited it but there's many contributors, it's quite a substantial volume. Yet I found whenever people are talking about not just what the problems are, what the scary stuff is but what vision can inspire us to move forward, a vision that allures us, a vision of a world in which we'd love to have our kids and grandkids live, I think that book did a good job on that.

There's another thing that you've written about. In fact, the most recent book that I just listened to like two weeks ago is your book on *Peak Everything*. I sort of went back. I know you wrote that some time ago but I just went back and listened to it because it's available on audio. I love audio books.

A lot of people don't really understand the concept. Even people that are involved in the sustainability movement and that sort of thing, there's sometimes some pretty unfortunate misunderstandings about what peak oil and what peak everything means. Could you just sort of sum up that name peak everything?

Richard: Of course there's been a huge discussion over the last decade about peak oil. The fact that we've reached the end of the cheap, abundant oil that drove the economy during the 20th century. Now I could go on at some length, as you can imagine, on the evidence and signs and statistics showing really that we're at a turning point with regard to world petroleum supplies.

Michael: Let me just jump in for a second. Your most recent book *Snake Oil* takes on in a very direct way the sort of knee jerk when people sometimes say, "We don't have to worry about peak oil," they immediately go to fracking and this sort of thing. At some point in this conversation I want to make sure that you have the opportunity to talk about that as well.

Richard: Yes, let's do that. That name is out there and it needs to be countered. The same principle that applies with peak oil applies to lots of other things. I wrote a book back in 2009 called *Blackout*, which is about world coal supplies. Folks talk about how the United States has 250 years' worth of coal. You really look at the coal that's left and the economic viability of it. Most of it kind of disappears.

Yes, the stuff is in the ground but most of it we'll probably never mine because the seams are too thin or too deeply buried or the quality of the coal is not good enough. Same thing with natural gas. Then you go onto other minerals and metals, all the non-renewable resources.

Then you look at the rate in which we're extracting renewable resources like fish from the sea and cutting down forests for timber. Or top soil. Top soil is regenerated. Theoretically that's a renewable resource but it takes hundreds of years to produce an inch of top soil in the way nature ordinarily does it. We're destroying 25 billion tons of top soil a year through modern industrial agriculture.

In all of those ways we're seeing an imminent peak and decline in availability of resources. Meanwhile, human population is also reaching an all-time peak. Just in the last century we've gone from a little over a billion human beings, maybe 1.5 billion in 1900, to today in 2014 7.3 billion. That's an astonishing rate of population growth. It's not going to go on.

If all of those people are being supported by resources that are about to become more scarce, that suggests that one way or another there will be fewer people by the end of this century. Either we're going to plan for that and find humane ways to gradually reduce human population or there's going to be a big die off.

Technology, the economy, everywhere you look we've reached this pinnacle of achievement and development on one hand. You could look at it the other way, of unsustainable rates of extraction and consumption on the other hand. That's what I mean by this term peak everything.

It's an absolutely astonishing moment in human history. I think people in the future will look back on it. Assuming there are human beings in the future, they're going to look back at this moment and say, "Oh my God, what a party that was. Couldn't those people have understood what they were doing and thought about the consequences?"

Michael: Yes, this is part of the motivation for this series. I've been playing with sort of mythic frames. I use personification a lot. For me, the word God is a personification of reality and so I personify the past and say the past is rooting for us. I personify the future, the future is calling us to greatness. I find that it's obvious mythic, it's not literal.

It's a useful belief that if we act as if the past is rooting us on, that is these countless ancestors that sacrificed and if it hadn't been for their struggle and their efforts and their sacrifice we wouldn't even be alive. To honor that, to be active today in a way that's a blessing to future generations in a way that both honors our ancestors but in a way that our descendants, whether we have kids or grandkids or just those alive in the future, would be proud of.

We in the western industrialized world where consumerism is sort of our religion, no matter what our professed religions may be, that's our cultural I want to say brainwashing. It's not that but it's values, a set of values. Our meaning-making system.

Richard: I'm sorry to break in. It's hard to have a conversation with Skype because one goes out and the other goes in. Consumerism is more than a zeitgeist. It's become the very basis of our economy. It's a systematic process by which that happened.

Early in the 20th century as a result of having so much cheap, abundant energy with which to make stuff our problem was overproduction. Our economic problem in the early 20th century was overproduction. That was solved with advertising and consumer credit to make it easier for people to buy more stuff.

Gradually over time the economy became addicted to growth in a very literal sense. Not in a psychological sense but in a structural sense. Now if the economy stops growing, if people don't buy stuff, if we stop consuming it becomes an enormous problem and people suffer as a result.

There are two realities that we've created as human beings over the course of the last century. There's a political and social reality in which growth is normal and natural and it has to continue in order for everybody to be okay. Forget about being wealthy and the Beverly Hillbillies. Just to be okay we've got to have more growth.

Then there's the physical reality of the finite planet on which we live. Those of us who pay attention to that physical reality look at the political reality and say it's insane. Meanwhile the people who are rooted in political reality regard any question of the growth paradigm and consumerism as being insane.

Michael: Exactly.

Richard: There's literally two realities.

Michael: It is. One of the things that I keep running into when I recommend your readings, your books or other people's books in this field, is that if you even question, if you even call into question or doubt the possibility that things might not continue to grow forever, people immediately go to, "You're just apocalyptic." As if that's the only other option.

Richard: Right, well we will get to a steady state economy. In many ways a steady state economy would be much better for us. It's not something that we have to invent from scratch. Prior to the 20th century economic growth was not something that people assumed or even thought necessarily was possible. Yes, empires came and went but for the vast majority of people daily life was pretty much the same from generation to generation.

As a result of that, parents and children and grandchildren could sort of speak the same cultural language. There was more of a sense of inter-generational understanding and sympathy. There was also more of a sense of security. You could feel secure that your culture, your lineage would be around in 100 or 200 years. People didn't even necessarily think in those terms because it wasn't even a question.

Here we are today. If you're paying attention, if you're actually looking at world events and climate change and resource depletion and ocean acidification and these sorts of things, it'll drive you crazy. It's literally toxic knowledge. If you pay attention to the physical reality of what's going on in the world it can make you really anxious, lose sleep, become unhealthy.

What do you do about it? Do you put on blinkers and try not to pay attention? Obviously not. We have to do something about this. What we have to aim for is to get back to a situation where we are living in a kind of steady state economy in harmony with Earth's resources and rhythms so that we can relax and enjoy life rather than being on the edge.

Michael: Actually, I'd like you to go a little more deeply in that direction. Obviously there's no shortage of bad news and scary stuff. How would you encourage people? What is your vision of, say, a future 50 years or 100 years or 200 years from now that inspires you? Then also say a little bit about how the Post Carbon Institute is furthering that vision and trying to bring people around that.

Richard: Well, I don't have a worked out vision of what the world is going to look like in 100 or 200 years. I know one thing, it's going to have fewer people who will be consuming less on a per capita basis. Our economies will be slower and more localized. All of the globalization, the fast-paced technological development of the last century is all based on cheap, concentrated, abundant fossil fuels. As that goes away we're definitely headed back toward a more normal kind of economy.

Normal is not bad. Normal's okay. If we can preserve some of the scientific and technological achievements that were so hard won over the last 100 years, electronic communications, modern medicine, our scientific understanding of astronomy and biology and evolution, all that sort of thing, if we can sustain those achievements then it's not a matter of going back to a punishingly harsh life of the agrarian past.

We could enjoy a new form of life that, again, is slower, more local and so on, but offers us the kind of cultural richness and opportunity that these technologies and achievements have given us.

Again, I don't know exactly what that's going to look like. That's the excitement of our time. We get to invent that, we get to design that. When I speak to high school and college

students what I tell them is, “Hey, look, this is the most exciting time you could ever possibly be alive because you’re going to have the opportunity. In fact, you’re going to have the necessity of redesigning the entire human project over the course of your lifetime, participating in that.” Hey, how much more exciting can you get?

Michael: I’m glad you mention that. This is a conversation that Connie Barlow, my wife, and I have had many times. It’s so easy to feel compassion for the young. Those of us who are in our 50s and 60s and older can so often go to the place, “I’m glad I’m not a young person.” Yet when you look at what has called forth greatness throughout all of human history it’s challenges. It’s significant challenges and doing something that’s of benefit to others and to the future in some substantial way.

I think there’s going to be no shortage of opportunities for that call to greatness and that call for heroic action and just that call for being engaged in each other’s lives that we just didn’t need to do when we were all wealthy or had the appearance of wealth and didn’t need to rely on our neighbors. You just really need to build a sense of community and support.

I think that many of the things that our souls, that our hearts, that our being, the social nature that has been missing in many contexts unless you happen to live in a rural community or part of some faith community that supplies that, much of the depression, much of the overwhelm I think is a lack of community and the knowing in our guts that we’re what I call out of right relationship to reality.

We need to come back into right relationship to reality. It’s kind of like the prodigal species waking up from the fact that we’ve squandered our inheritance and now we’re waking up to a predicament. Hopefully we’re coming back home to reality.

Richard: Maybe I could offer another little related riff based on an essay that I’ve just written. It’s not published yet. It’s an homage to one of my favorite thinkers, the late anthropologist Marvin Harris.

The relevance will become apparent in a moment. Harris was a strong advocate of what he called cultural materialism. I call it cultural ecology. It’s the understanding that human cultures develop in response to their environment. That simple insight, for him, led to a whole anthropological research project.

The sort of culminating realization he had was all human cultures feature three distinct realms. The infrastructure, which is how people get their food and energy and materials. Basically it’s their relationship with the natural world as a society. There’s the infrastructure. The structure is how they relate to one another. Decision making, distribution of wealth, basically politics and economics.

Then there's the superstructure which is how they explain it all to themselves and each other. Religion, ideology, political theory. Obviously these three spheres are interrelated but they are also distinct and literally every culture, of the thousands of human cultures that have been studied every one has some version of all of these three, infrastructure, structure and superstructure.

Now, the core of this insight is that Harris called it probabilistic infrastructure determinism. The structure and the superstructure are always contested. People are always fighting over distribution of stuff and how to make decisions and beliefs and religions and so on.

When the infrastructure of society changes, if we change how we get our food, if we go from a hunting and gathering society to a herding society or a horticultural society or an agricultural society, everything else has to change. We know this because you can see it in literally every culture that's been studied. If it's a hunting and gathering society you can pretty much predict the nature of their social relations and their spiritual beliefs and so on.

Of course, there are differences but they're very, very similar in comparison to all agricultural societies which tend to have more social hierarchies and then their religions also feature hierarchies of gods and goddesses or monotheistic systems, whatever.

What I'm getting to with this is we are on the cusp of the biggest infrastructural change perhaps in all of human history. Certainly the biggest since the industrial revolution. Of course, the industrial revolution changed everything in terms of the economy and politics and so on. That's nothing compared to what we're headed into right now.

Everything is up for grabs. If you have a vision of a possible future, well first of all make sure it's grounded in infrastructural reality. The reality of the kinds of energy sources we're going to have, the kind of food system that we are going to have in the late 21st century and beyond, a food system that's more localized and is not dependent on fossil fuels.

What are the political realities? What are the ideologies that could help us make that transition? Let your imagination run wild. Go out there and make it happen. For people who want to change the world, hey, what a time to be alive because the world is going to change anyway. All you have to do is have some sense of the direction of that change and the wind is at your back.

Michael: Amen. What you just were sharing reminded me of a book that I read recently from one of my oldest mentors. My two main mentors in my life have been Thomas Berry and Joanna Macy. Joanna's book *Active Hope* is one of the books along with your book *The End of Growth* that keeps us in gas and food money. Connie and I travel speaking all the time and we sell books and DVDs related to our topics in the back. Thank you for keeping us in gas and food money.

Joanna's book really touches on how do we stay engaged in the face of challenging times and do so from a place of hope and possibility. Not Pollyanna hope but the kind of thing you're talking about. The challenges are here. We are at one of the biggest turning points in human history. If you've got a good idea, if you've got a way of thinking and interpreting, there's never one right interpretation of anything.

What we shouldn't be fighting over are the right interpretations. How many different inspiring interpretations could we have of our current situation that would help move us forward in a healthy way?

I want my viewers and listeners in addition to your book *The End of Growth*, which I highly recommend, I also recommend Joanna Macy's book *Active Hope*.

Richard, one of the questions that Connie wanted me to ask all the people in this series, which is off the wall, if you were to have dinner or a beer or whatever with three people throughout human history, any three people throughout human history, who would they be and why?

Richard: Oh, Lord, what a question.

Michael: I purposely don't tell people ahead of time that I'm going to be asking this question because I want it spontaneous. It's been so fun to hear what different people. Everybody, it's like, "Oh, gosh, I've got to think about this in the moment," but yet what they come up with is always cool. If you're game I'd love to hear.

Richard: Oh, man. Marvin Harris might be one.

Michael: That's what I thought. When you talked about Marvin Harris that's what reminded me to ask that question.

Richard: A completely frivolous personal one would be Niccolo Paganini, the great violin virtuoso of the 19th century. I play the violin myself and I try to play some of Paganini's music and it's devilishly difficult. He was such a character. He was the first rock star. He sort of almost invented the genre of the traveling virtuoso. He was a real working musician and he made a show out of it. He was just such a character.

Michael: I can imagine. I've heard that you're pretty awesome on the violin.

Richard: That's so totally irrelevant.

Michael: No, that's exactly a personal thing. Who would be the third?

Richard: Who would be the third? Lewis Mumford.

Michael: Wow, yes.

Richard: In many ways Mumford inspired me on my journey. I started reading some of his books back in the early '90s. He wrote so many books. He really throughout his career one of the things is he was a self-taught scholar. He didn't have an advanced university degree. I can kind of relate to that. I sort of trod the same road.

He became just a brilliant observer of society and of human history, looking at the history of technology from the perspective of how human beings relate to the natural world.

As I said, I learned so much from him. I would love to have the opportunity to sit down and have a beer with Lewis Mumford.

Michael: I think I'd like to join you.

Richard: Any Mumford, I highly recommend looking up one of his books. Go to the library and check one out and have a read.

Michael: I agree. I'd actually like to be in on that. I'd like to join the two of you. I want to cycle back to your taking on, I thought in a brilliant way, the whole we don't have to worry about peak oil anymore myth that's out there that you've written about in *Snake Oil*. Could you share a little bit about that?

Richard: My book really got its start from a project we did at Post Carbon Institute. We were kind of skeptical of the claims being made for 100 years of cheap, natural gas as a result of fracking and the US becoming energy independent from tight oil and maybe becoming an oil exporter again in the 2020s or 2030s. That sounded to us like it was probably too good to be true.

One of our fellows, David Hughes, who's a long-time geoscientist, had a long career with the Canadian Geological Survey, we set him to work analyzing the data. We hired or bought rights to drilling data on over 63,000 currently producing fracked oil and gas wells in the US.

He looked at the location of each well, the initial production rate, how production was evolving over time. What he found was that in each of the plays or the areas that are being drilled there's only a small core area where production is initially prolific and profitable. Just about everywhere else the oil or gas is there but it's just not profitable to drill for it.

You do the numbers, do the math, and clearly this is a short-term bubble. Already in terms of shale gas most of the plays are either in decline or have leveled off in production. The

only shale gas play that's still showing increasing production is the Marcellus in Pennsylvania and West Virginia and so on.

The same is going to happen in North Dakota, in south Texas within the next couple of years. Those areas that have seen rapid growth in oil production over the last three or four or five years are going to level off and start to decline. The decline is going to be rapid because each well declines at a rate of 70% or more in the first year.

That's why the companies have to drill and drill and drill. Most of the companies that are drilling are relatively small companies that are highly leveraged, that have taken on an enormous amount of debt. It costs a lot to drill this much. Especially in the natural gas area there are very few companies that are actually making money on actual production and sales of product.

What they're doing is it's like a speculative game. They bought up drilling leases early on in this whole process. Millions of acres were leased for drilling. Then they drilled as much as they could and as fast as they could to produce a lot of natural gas to create this hype about how much is there and how cheaply it can be done and so on. On the basis of that hype now they have sold off a lot of their leases to other companies, often foreign companies. It's the sales of drilling leases that have actually supported the bottom line in many of these companies as opposed to actual sales of product.

This is the classic financial bubble as well as a resource bubble. Of course it's going to collapse. The only question is when. The data suggests that it's not very far off. Probably the next couple of years. Maybe three or four years. Depends on the rate at which they can borrow money and drill. Of course, to borrow all that money they have to have low interest rates.

The current financial environment with the quantitative easing from the Federal Reserve has made it possible for the shale bubble to inflate. If the Fed changes its interest rate policy that in itself could spell the end of the shale bubble. It'll end anyway just because of the need for constant drilling and basically they're running out of good places to drill in the sweet spots or the core areas.

Michael: That's great, thank you.

Richard: The book also touches on the environmental problems of fracking. I should say just a little bit about that also.

Michael: Yes, please.

Richard: As we go to lower and lower quality resources, which is what's happening. Instead of regular conventional oil now the industry is turning to tar sands in Canada to deep water oil in the Gulf of Mexico and to fracking. With all of these unconventional resources the

environmental costs are much higher. Whether it's the deep water horizon or the devastation of Alberta that we see as a result of tar sands or the problems with air, water, human health and the health of pets and livestock and wildlife that we see as a result of fracking. It's all the same story.

It's really important that people understand this. Of course, the oil and gas industry is fighting hard to make us believe that there are no environmental or human health risks with regard to fracking. I go into some detail in the book looking at the kinds of studies they've done, which have been entirely funded by and designed by industry to look at only situations where everything is going exactly according to schedule, exactly as planned.

In the real world companies cut corners, things go wrong, well casings fail, methane is released, all kinds of cancer-causing hydrocarbons go into the air and the water. It's a disaster.

Fracking is something that is almost predictable given where we are in the depletion of conventional resources, but the longer we do it the bigger the bill is going to be in terms not only of the financial cost to society but also the human health and the environmental cost.

Michael: I'm glad you mentioned that. In fact, your books *Snake Oil* and the movie *Gasland* and *Gasland 2* are both powerful resources in that regard. Richard, just a few more questions. What do you see as the most, there are so many things that need to be done and that are being done, some of them not as fast as perhaps we need to, but what would you say is the single most important systemic thing that we need to do? Not just changing individual light bulbs or whatever the things that people do which is fine but what do you see as the most important thing?

If you were to write a prescription for American society or humanity at this point, what should we do in the next five to ten years that is likely to make the biggest difference? What would you suggest?

Richard: Well, I think there are two ways of looking at that. One is if you can influence the managerial elite what should they be doing. The other is what should we be doing, ordinary people. Those are two very different approaches.

If somehow we could influence the managerial elite, which I don't know if that's possible or not, but if I were sitting with Federal Reserve board managers and heads of banks and governmental agencies and so on I'd say we've got to get off growth. That's heresy, it's crazy from the standpoint of their reality. Nothing else is going to solve this problem.

From the standpoint of climate we can build solar panels and we can trade carbon credits until the cows come home. As long as the economy keeps growing, as long as demand for more energy keeps growing we'll overwhelm all of those efforts. We've got to reduce consumption.

There are better and worse ways of doing that. If policy makers understood it an absolute survival necessity, species survival necessity of doing that, there are things that they could do like rationing energy, debatable energy quotas. I could go on. There are policies that we could implement that would assist with that.

Then if you look at it from the standpoint of what we should be doing as individual people, there's so much that's already being done. Here's where it's possible to be really hopeful because while you look at the managerial elite and they're all going in absolutely the wrong direction, from the standpoint of ordinary people look at what's one of the biggest trends right now.

Localism in agriculture, the biggest trend is local food and farmers markets and people wanting to grow more food in their backyards and keep chickens. The transition town movement, people just getting together and saying, "Look, we know what has to happen. We've got to get off fossil fuels. We've got to have more of a local economy. We've got to be more self-sufficient. We've got to learn how to get by with less. Let's get together and figure out how to do it and have a good time making it happen."

It's happening everywhere. There are good stories. Our organizational website, Post Carbon Institute, is Resilience.org. Every day if you go to that website you'll see some happy stories of people here or there, often in the most unexpected places, doing really creative, imaginative things to move toward the reality that we know is necessary and is going to actually be better for us in the end.

Michael: Amen. I was going to ask you to share what would be the particular resources that you would most highly recommend. Resilience.org is certainly one that I would also echo and say, yes, lots of good stuff there.

I guess in closing I'd like to ask if you were to speak to a young person who's sort of becoming aware of these challenges, global warming, peak oil, the growing gap between the rich and the poor, the depletion of the soils and the seas and the acidification and all these big challenges that can be hugely overwhelming and depressing if you just stay focused on that. Yet I also often tell people if you haven't felt at least some anger and depression and fear you don't get it yet.

Richard: Not paying attention.

Michael: Exactly. What would you say to a young person that would be a shot in the arm, that would be a hopeful inspiration to be engaged and to follow where their heart and the world's needs intersect? What would you share?

Richard: Well, boy, there's so much. I've already said a lot of it. Do pay attention. Look at what's actually happening in the real world with climate change and resource depletion and economic inequality and all of that. Steep yourself in it but don't get bogged down in it. It's possible to do that. It's possible to become very cynical about life if you just get bogged down in those kinds of statistics and realities.

Find your passion. What is it that you love to do? See how that contributes to the creation of a way of life that's sustainable and meaningful and is going to get us through this crazy period of time. Then devote yourself to that. Unless you're doing something that feeds your soul, that makes you genuinely happy, what's the point?

Michael: Wow, I can think of no better note to conclude on. If people want to know and learn more about your work in addition to Resilience.org, Post Carbon? Where should folks go?

Richard: I have a website, RichardHeinberg.com. My organization has a website, PostCarbon.org. Resilience.org is I think just a great site. It's the first thing I look at every morning. If folks haven't checked it out I think they owe it to themselves.

Michael: Cool, great. Richard, thank you so much. This has been a wonderful conversation. I've been looking forward to it for a long time. I just wish you the best in your own work. It's an exciting time to be alive.

I remember a quote. Gosh, I haven't thought of this quote in a long time. A quote from Jim Dodge, a bioregionalist. He said, "Most of the people I talk to believe that we have a fighting chance to stop environmental destruction in 40 to 60 years and to turn the culture around in 500 to 1,000 years. Fighting chance translates as long odds but good company. Get in there with the best style and spirit you can muster knowing that there's only a functional difference between the root and the flower. They're both a part of the same abiding faith so dig in."

It's great to do this work with you, brother.

Richard: You, too, Michael. Thank you for all you're doing.

Michael: Thanks.