



## TRANSCRIPT

### Environmental Insights Episode #8, 2024

**Guest:** Karen Fisher-Vanden

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**Fisher-Vanden:** It's really great to see that people have that passion about the environment, and in particular climate. You want to harness it, but you want to give them the tools to be able to be more effective in trying to argue their case and make a difference.

**Rob Stavins:** Welcome to [Environmental Insights](#), a podcast from the [Harvard Environmental Economics Program](#). I'm your host, [Rob Stavins](#), a professor here at the [Harvard Kennedy School](#) and director of the program.

I've had the pleasure in these podcast conversations over the past few years of chatting with a number of former Harvard Ph.D. students who have gone on to wonderful careers, and today is no exception because I'm joined by [Karen Fisher-Vanden](#), the Distinguished Professor of Environmental and Resource Economics and Public Policy at [Pennsylvania State University](#), and the current president of the [Association of Environmental and Resource Economists](#). Welcome, Karen.

**Fisher-Vanden:** Thank you, Rob, and thank you for that introduction.

**Rob Stavins:** You bet. So, before we talk about your research, your leadership of the association AERE, and your thoughts on environmental and energy policy, before we do any of that, let's go back to how you came to be where you are. So, where did you grow up?

**Fisher-Vanden:** I grew up in Santa Barbara, California. I'm a lucky person who was able to say that.

**Rob Stavins:** So, does that mean both primary and high school there?

**Fisher-Vanden:** Yes...

**Rob Stavins:** Indeed. And then you stayed in the state because you went on to college at the University of California Davis, is that right?

**Fisher-Vanden:** That's correct.

**Rob Stavins:** And now it looks like you have two degrees – a BS in mathematics, computer science, and a BA in economics. If that's correct, how did you swing that?

**Fisher-Vanden:** Well, it took me a little longer than four years, I'll put it that way. But it was something that I started out as a math major, and this was when computer science was not a major. This is way back when. I'm starting to date myself. So, computer science came around and I became very interested in becoming maybe or at least learning more about that tool and using it, but I had also realized I really liked economics. I liked applying the tools rather than building the tools. So, I found myself just interested in building the toolbox, computer science and math, but also applying it, in using economics to apply that.

**Rob Stavins:** Now, when you graduated, you started off pursuing a career, I think in the private sector in software. Is that right?

**Fisher-Vanden:** Yeah. So, I started out as a software engineer at Hewlett Packard, and that's when I realized that, again, reinforced the idea that I didn't like building the tools but rather using them. So, that's when I went back and I thought, well, what really did I enjoy from my undergraduate days? I had taken a math modeling course where I was looking at an economic problem using modeling. That's how I got into economic modeling.

**Rob Stavins:** Now, from Hewlett Packard, you went to UCLA, to the Graduate School of Management.

**Fisher-Vanden:** That's right.

**Rob Stavins:** And you did a MS in Management Science. I assume that that's different than an MBA but tell me about it.

**Fisher-Vanden:** Yeah, so this was more of an academic master's

**Rob Stavins:** I see.

**Fisher-Vanden:** An MS. And so, when I was at Hewlett Packard and I came to that realization that I wanted to use the tools, I realized that going back to get my master's where I could major in something where it was computational applying to economics and management science seemed to be a way to kind of go about that.

**Rob Stavins:** And reasonably from there, you went to the [WEFA Group](#), I think as a consultant, but I don't know what the WEFA group is, so can enlighten me.

**Fisher-Vanden:** So, that's Wharton Econometrics Forecasting.

**Rob Stavins:** Oh, okay. That I know.

**Fisher-Vanden:** And so, just to give you a little bit of background, that kind of ties in how I got into computable general equilibrium modeling. When I was a master's student, there was a business economics professor, Larry Kimbell, who you may know or remember. He ran

the UCLA business forecasting project, and he was looking for an RA to help him build a computable general equilibrium model to assess the economic impacts of the air quality management plan in LA. And so, he found me and saw that I had a computer science background and also with economics, and he recruited me to work with him on that. And Larry became the chief economist at WEFA for a stint. And so, he kind of gave me the connection there.

**Rob Stavins:** So, that all makes sense. And then did you go from there to the South Coast Air Quality Management District?

**Fisher-Vanden:** Yes.

**Rob Stavins:** You did. And what did you do there?

**Fisher-Vanden:** I was an economist there, and I was, as for those people that don't know, the South Coast Air Quality Management District is responsible for air quality regulation in the LA region.

**Rob Stavins:** An important institution in California.

**Fisher-Vanden:** Yeah, I learned a lot from working there. And I did essentially economic analysis using economywide models of proposed air quality rules. So, I learned a lot about the regulatory process at local, regional, and state levels and even federal levels.

**Rob Stavins:** And then next up was Pacific Northwest National Laboratories.

**Fisher-Vanden:** Yeah, I moved right from the South Coast Air Quality Management District to Washington DC where I worked for the Pacific Northwest National Lab developing CGE models or economy-wide models for climate policy analysis. So, that's how I got into climate.

**Rob Stavins:** So that's where it started. How long were you there in DC?

**Fisher-Vanden:** Let's see. I was there for, I want to say maybe three years, and that's when I decided that I needed more education. I had met... Just to give you a little bit back, when I was doing this work for Larry Kimbell building the CGE model, we had attended an NBER workshop in Coronado. During that time, I had no idea because I was new to the field, but it was attended by Dale Jorgenson, John Shoven, and John Whalley. And that's where I met Dale for the first time. So, Harvard was on my radar screen.

**Rob Stavins:** And indeed, you came and studied for the Ph.D. in Public Policy, which you received, I think in 1999, focusing on environmental and resource economics, working very much with indeed Dale Jorgenson.

**Fisher-Vanden:** Yes, that's correct. So full circle,

**Rob Stavins:** What was your topic and who was on your committee? Dale was chair, I assume.

**Fisher-Vanden:** I was looking at economic transition in developing countries. So, I was looking at China in particular. So, I built a model to try to analyze what would happen to carbon emissions if... Now, again, remember that this was in the 90s and China was growing out of the planned economy. It was kind of this dual economy of plan and market. And so, growing out of the plan meant that China was becoming more of a service industry, service-focused economy. And so, what did that mean for carbon emissions going forward if China moved completely out of the plan into a market economy? So, that was what my dissertation was on.

**Rob Stavins:** And who were the other members? Who did I miss of the committee?

**Fisher-Vanden:** Well, you of course, I was very fortunate to have you on my committee.

**Rob Stavins:** I did not remember that. So, that's not why I asked. Sorry.

**Fisher-Vanden:** Bill Hogan and Adam Jaffe were also...

**Rob Stavins:** That's a great group, excellent group. Oh yeah. Oh, I remember. I was lucky to be on there.

**Fisher-Vanden:** Yeah.

**Rob Stavins:** So, you received the Ph.D. and then you immediately accepted and offered to become an assistant professor of environmental studies at Dartmouth College. Is that right?

**Fisher-Vanden:** That's correct, yes.

**Rob Stavins:** Yes. And Dartmouth College is an interesting institution in a way, because although it has the word college, it's much more similar to a research university than certainly to a liberal arts college.

**Fisher-Vanden:** Absolutely. I think it's an R1 research institution, so it was very much not a teaching college, although I had outstanding students. In fact, one of my senior thesis advisees was Ken Gillingham.

**Rob Stavins:** Oh, really?

**Fisher-Vanden:** So, this is the type of students I was getting. So, it's very, very lucky.

**Rob Stavins:** You were there into 2007. You received tenure there, I believe.

**Fisher-Vanden:** That's correct.

**Rob Stavins:** But you decided to make a lateral move in 2008 to Penn State. Why was that? That's

**Fisher-Vanden:** Right. Well, a number of reasons, but one was being able to do the work that I do required kind of a larger team of graduate students, and we didn't have graduate students in my department.

**Rob Stavins:** I see.

**Fisher-Vanden:** Penn State is really known for its work on climate. We have some very famous people here. So, I was really excited about the opportunity to come here and actually build a large research program in basically integrated assessment modeling and economy wide modeling for climate, not only climate policy, but climate impacts and adaptation, and I was able to do that here. It's been a great ride.

**Rob Stavins:** So, that naturally takes me to talking with you about your scholarly work in this world of environmental resource and energy economics. Your published work and your working papers are actually very diverse. So, can you identify for our listeners one or maybe it's more than one common theme that you see across at least some of your work?

**Fisher-Vanden:** Yeah, I think a common theme would be that I'm very interested in the economic feedbacks that drive climate policy, climate impacts, and to be able to get those economic impacts into a lot of these models that don't account for that. So, power system models or some of these process-based models, even econometric models. And I can maybe elaborate. A good example of that is [this paper](#) that we published in JAERE, which is the [Journal of the Association of Environmental Research Economists](#). It was published in 2018 with my graduate student at the time, Qin Fan, who's now a professor of economics at Fresno State, and Allen Klaiber at Ohio State University. And what I really like about this paper is it shows how econometrics and structural econometrics can be combined with economy-wide modeling to capture some important general equilibrium feedbacks that are crucial for getting the story. And so, at that point, there had been a number of papers out there that were using these residential sorting models, which is a structural econometric model, to analyze the effects of climate change on household location choice. And they basically were finding that climate change would create this large shift in population from southern states in the US to the northern states. But however, if you take into account equilibrium effects, you know that if everybody moves, north wages fall, housing prices increase. And these models were not taking that into account.

**Rob Stavins:** I see.

**Fisher-Vanden:** And so, we endogenize that by connecting that with a CGE model and found that even though you do get some movement north, it significantly is dampened. And that seems to make sense if you start to look at even what's happening to areas that you see these people moving to high climate risk states like Arizona, Texas, Florida, because the cost of living is a lot cheaper. So, we're starting to already see that type of thing.

**Rob Stavins:** Listening to you describe that what goes through my mind is that Dale Jorgenson would be very proud of you. He is looking down now with a big smile on his face.

**Fisher-Vanden:** So yeah, the idea of I'm more of a modeler than an econometrician, but I am very much into... My theme, I guess, if could go back to your original question is really how do you combine tools to really get the right answer on some of these questions?

**Rob Stavins:** Right now, your work is not only, as I said, diverse, but also, you're quite prolific. And I think some of our younger listeners would probably benefit. If you could tell us how you go about identifying a research project and deciding to launch a research project. Or just as importantly, if you prefer, how do you know when the time has come to abandon a research project in which you invested a significant amount of time, but you want to avoid getting trapped in a sunk-cost fallacy?

**Fisher-Vanden:** Yeah, that's a really, really good question. In terms of good questions, I think a lot of my good questions that I've been able to... It's always in a collaboration with other people and in particular with other disciplines, with the physical scientists. I work a lot with hydrologists currently, and I'm learning about their modeling, their literature, what they're finding and realizing, hey, you're missing the economic picture here. And so, we have launched a number of projects just based on my collaborations or my relationships with people in other disciplines. And I think that's also true with just in terms of this paper that I just explained, Allen Klaiber being a really good scholar in residential sorting to learn more about that tool, I realized he and I realized, hey, we could really do something here. So, I think it's a lot, the collaborations are really important, but in particular, I really want to emphasize having those collaborations with other disciplines, other disciplinary scholars, and in terms of getting rid of ideas, that's a hard one because I have a project right now that's turning into a really good paper, but we've been at it for six years now.

**Rob Stavins:** Oh my gosh.

**Fisher-Vanden:** So, there were times where you... And I think there were times where we really thought about scrapping it, but then because I work on teams of people, there would be somebody say, but what about this? And so, it kept it going. So, I don't know. That's maybe not a great answer to your question. I don't know if I've done much of that.

**Rob Stavins:** Well, it's helpful. So, I imagine you have actually wound up learning a great deal of natural science in the process over these years, right?

**Fisher-Vanden:** Yeah, absolutely.

**Rob Stavins:** Now, you've regularly served on national academies panels, EPA review panels, the EPA Science Advisory Board, and the Intergovernmental Panel on Climate Change. And so, what I'm wondering is whether those have essentially been a diversion, perhaps a worthwhile diversion from your research and teaching? Or, has that kind of service actually contributed to your research and/or your teaching?

**Fisher-Vanden:** Absolutely. A lot of people say, gosh, you're involved in a lot of things, but I'm very selective about what do I agree to do because of limited time, and I run this very large DOE grant, but the IPCC in particular... You were very involved in the IPCC, and I was a

lead author of the [Fifth Assessment Report Working Group Three](#). And even though I was involved in helping write our chapter and everything, what I really thought was an important thing was actually the relationships I built with people in other countries that I continue to collaborate with. And I always see at, when I go to Europe, they invite me to workshops or conferences or to give a talk. So, that part of it has been very, and I find that with all this service work, I guess external service work.

**Rob Stavins:** So, it does reflect itself in your research. Does it also reflect itself in your teaching, these different kinds of services?

**Fisher-Vanden:** Yes, absolutely. Constantly being able to say... Just to know how the IPCC works, and I know you know this too, that has been very valuable not only in teaching, but I have a graduate student right now who's working on something that I thought, this is something that would be very valuable to the IPCC because I know what holes are there, what needs to be kind examined. So, a lot of times being involved in these things allows you to identify new areas of research, and that's helped me with some recent direction of my research program.

**Rob Stavins:** So, I want to turn to another area of your service, that is that you're now the President of AERE, the [Association of Environmental and Resource Economists](#). That's an elected position, which prompts me to make a public acknowledgement of the fact that many years ago I agreed to be one of two candidates on the ballot to become the president. And I lost...

**Fisher-Vanden:** I can't believe that.

**Rob Stavins:** Well, it's true. That's a true statement. It may not be a well-known fact because no one cares, but it's true. Anyway, so congratulations to you.

**Fisher-Vanden:** Thank you.

**Rob Stavins:** So, what I want to ask you is, is there a particularly important challenge or for that matter, a great joy that you face as president of what's a very important organization?

**Fisher-Vanden:** Yeah. When I agreed to be put on the ballot, I actually thought I would not win because the person, and I won't name the person, the person I was running against was an esteemed scholar, and I almost voted for this person myself because this person's quite good. So, I was a little shocked when I got the phone call that I had won, and I actually asked for a recount. So, I knew it was going to be a lot of work. I was coming up to a sabbatical year, and so I thought that would be a good time to kind of have my first year as president, you start out as president-elect, and you shadow the president who was Karen Palmer, who as you know is just an amazing person. So, I was able to... I freed up my schedule. I was on some journal editorial boards that I dropped off. So, you do need to clear your calendar, but there's so many different aspects of this job. And one thing... When people have been asking me, well, it's a lot of work, dah, dah, dah. I said, this is probably one of the most enjoyable things I've ever done. I know it is a lot of work, but I have met so many people in my community at different universities. I've become family

with a number of people who are journal editors or officers or board members. I've gotten to know so many people through this process. It's just been... I have enjoyed it thoroughly. And even though it's a lot of work, it really has been a joy and I really don't have any complaints about it at all. You do have, if you agree to do something, you really do have to say, okay, I'm going to do this. I have to get rid of something else. You can't try and layer it. Yeah.

**Rob Stavins:** Well, now that I hear how much fun it's been for you, I feel even worse about having been defeated in that election. And I'll add, you said that, that quite modestly, you said that you didn't expect to win. Quite immodestly, I did expect to win. I remember when I got the phone call, I think it was Ray Kopp, who sadly very recently of course, passed away. I think it was Ray Kopp who called me, and he said, we have the results, the election. And I was already to say, well, thank you, Ray. That's great. What do I have to do and everything. And then he told me that I had lost, and that was that.

**Fisher-Vanden:** Did you ask for a recount?

**Rob Stavins:** No, I did not ask for a recount, but I did actually deny it, and I got some of my graduate students to mount an insurrection. No, I didn't. So, the last thing I want to ask you is something that I'm sure you've been sensitive to, both in your travels in Europe, your teaching, and your work in the United States, and that's this increase in youth movements of climate activism that we've seen maybe over the last five years or so. I mean, even before that, it's gradually there's been more and more interest among younger and younger people. I'm not just thinking of Greta Thunberg and her associates, but more broadly on college campuses, at the annual Conference of the Parties, at all sorts of places in Europe and the United States. It's been quite striking, and I'm interested in your reaction to that.

**Fisher-Vanden:** Yes. Like you say, we see this firsthand, and it's really, actually, it's really great to see that people have that passion about the environment and in particular climate. I think a really good example is that when I was at Dartmouth... So I taught... Now I teach just graduate courses, but when I was at Dartmouth, I taught undergraduate courses. So, I really got to interact with young, more activist type of students. And I was in the environmental studies program, but my environmental econ course was cross listed in the Econ Department.

So, it was really interesting because I mean, I had literally an aisle down the middle, and on one side were the environmental studies majors, and on the other side was the economics majors. And it was really quite an opportunity for them to learn from each other, which I saw happen during the course of the term. But environmental studies majors were very passionate and very much into activism, and they all had to take my course, and they thought that economics was the devil and the source of the problem. And I remember telling them almost every year that you can certainly guilt people into trying to do the right thing, but that will only get you so far, right.

And why you're taking my course is you have to understand the economic incentives to change behavior, and you need some sort of training in economics to be able to do this. You need to be able to talk like an economist in terms of talking to policymakers. And I



think that really, it was great. I saw students make that change during my class in the sense of they were still very passionate about the environment but giving them the economic tools to make that argument other than just trying to make people feel guilty about driving an SUV. So, that's probably my best example of you want to harness it, but you want to give them the tools to be able to be more effective in trying to argue their case and make a difference.

**Rob Stavins:** That's interesting. Over the, I think it's 35 years I've been teaching my course, which was originally Environmental Economics and Policy, and now it's the Economics of Climate Change and Environmental policy.

And I've noticed similar evolution. So, I have master's students, but most of the class are Harvard College undergraduates who are fantastic and about equal numbers from the economics concentration or major and from environmental science and public policy concentration. And there was a time at which they were very, very different in their perspectives, but they have converged. And so, the time has now passed where I need to convince people that they should pay attention to the economics. Of course, this is an elective, so they've volunteered into the course. So, it's a select group obviously. I'm not saying it's representative of society, but I've certainly noticed that change. So, Karen, listen, thank you very much for having taken time to join me today in this conversation.

**Fisher-Vanden:** Oh, it was so enjoyable, and it was great to talk to you again, Rob, and remind you that you were on my committee.

**Rob Stavins:** Yes, indeed. Now I know that at least, yeah. I didn't become president of AERA, but I was on your committee. Two things I've been reminded of in this conversation. So, my guest today has been [Karen Fisher-Vanden](#), Distinguished Professor of Environmental and Resource Economics and Public Policy at [Pennsylvania State University](#).

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