

Podcast Series: Holistic Nature of Us

Episode #82 : Meet: Dr. Stephanie Seneff, Ph.D.

<https://www.judithdreyer.com>

Welcome everyone to my podcast series The Holistic Nature of Us. I invite you to take a journey with me into a better understanding of the concepts behind our holistic nature, and how that ties us directly to the natural world around us. My intention is to be your guide for this half hour as we begin seeing our world with fresh eyes, gaining more understanding, and learning how can connect the dots in practical ways that we are nature and nature is in us.

I feature a broad range of guests deeply concerned about the environmental issues of our time and more; authors and educators, practitioners, and others whose passion for this earth and for all species help us create sustainable bridges of understanding. These folks are innovators. They are action oriented, creating solutions in a variety of ways that honor us and the planet's holistic nature and I am so honored to share their stories, their projects, and their passion with all of you. So, thank you for joining me today for another engaging interview.

I am so excited to introduce all of you to Dr. Stephanie Seneff, who is a Senior Research Scientist at the MIT Computer Science and Artificial Intelligence Laboratory in Cambridge Massachusetts. She has degrees in Biophysics and Electrical Engineering as well as a PhD degree in Electrical Engineering and Computer Science, all from MIT. For over three decades, her research interests have always been at the intersection of biology and computation: developing a computational model for the human auditory system, understanding human language so as to develop algorithms and systems for human computer interactions, as well as applying natural language processing (NLP) techniques to gene predictions. She has published over 170 articles on these subjects and has been invited to give keynote speeches at several international conferences. In 2012, Dr. Seneff was elected Fellow of the International Speech and Communication Association (ISCA).

In recent years, Dr. Seneff has focused her research interests back towards biology. She is concentrating mainly on the relationship between nutrition

and health. Since 2011, she has published over two dozen papers in various medical and health-related journals on topics such as modern day diseases including Alzheimer, autism, cardiovascular diseases, as well as analysis and search of databases of drug side effects using NLP techniques, and the impact of nutritional deficiencies and environmental toxins on human health.

I first came across Dr. Seneff when she was a keynote speaker in Ocean Robbins' Food Revolution Summit that was given a few years ago. Today I've invited her to talk to us about the Covid-19, her glyphosate research on health and our immune system and how she feels that's impacting us today.

Welcome, Dr. Seneff.

DR. SENEFF: Thank you so much for having me.

JUDITH: Let's begin with glyphosates and what you feel the key points for us to understand about glyphosates.

DR. SENEFF: Well glyphosate is the active ingredient in Round-Up, which is a highly used herbicide around the world. The United States uses more per capita than other country in the world and we also have a very big problem with our health care system. We have many, many people who are sick. We have diabetes, obesity, autism, all these things are you know higher really in the United States than any other parts of the world. We don't seem to be concerned about what's causing the rise in all these conditions and our government doesn't seem to be concerned. It's just more concerned about how we pay for all this health care and it frustrates me because I actually believe that glyphosate is a major factor in all of these diseases. I believe it's true because it has a very unique mechanism of toxicity that has eluded people.

People have not appreciated what it can do and it's unique. There's no other chemical in the world that acts the way glyphosate does. This is what I believe: (it's a theory), I believe there's substantial evidence to support it from the existing research literature including from the work of Monsanto's own researchers, the company that invented glyphosate and put it on the market in 1974.

So ,it's been around for over forty-five years and as glyphosate usage goes up these diseases all go up in step. We have very strong correlations between autism and glyphosate in terms of the temporal patterns of these

diseases, autism, dementia, diabetes, obesity, various gut problems like inflammatory gut, pancreatic cancer, and thyroid cancer. All these diseases are going up dramatically and people say, well correlation doesn't mean causation. We can dismiss this. There are so many other things. Well that's true but when you try to find something else that matches as well as glyphosate, I have not found it. And I've been looking, and I have not found anything else that matches as well as glyphosate. Because glyphosate is perceived as being nontoxic, we use it generously and carelessly.

You know people don't realize that it's so toxic. Its mechanism of toxicity is insidious because you don't get bowled over by it. When you get exposed to it you don't immediately get sick. It takes time. It goes into, what I believe it's doing, and this is theory, it's going into all the proteins of your body and substituting for glycine in those proteins. So, when your body synthesizes proteins it builds them out of amino acids and glycine is the smallest amino acid. It's very, very important in many proteins. It plays an essential role and it's been....Did you want to comment?

JUDITH: Yeah. It's very interesting when you talk about the pervasive use. I think what I want to just say at this point is I didn't realize that on non GMO crops, it's being used. We think of non GMO crops as having non genetically modified seed, which is great. But then they put it (the seed) in the ground and they use Round-Up anyway to take care of the weeds.

DR. SENEFF: They use Round-Up at the end in fact, for major crops like oats and wheat and barley and legumes like chickpeas and lentils. Those are testing sky high levels of glyphosates in the food from those crops because they're being sprayed by glyphosates right before the harvest as a desiccant or as a ripener. Sugar cane is another one. All these crops that are non GMO are being sprayed with glyphosates right before harvest, which is the worst time. It goes up into the seed. It gets into the foods that are derived from those crops. The highest levels of glyphosates are being found in these non GMO foods.

JUDITH: So non GMO simply means it's a non-genetically engineered seed, but it doesn't mean it's organic.

DR. SENEFF: Exactly. People mix that up. People think, oh I'm buying non GMO. It's safe. And that simply is not true, especially for example oats. mean Cheerios and oatmeal cookies and oat cereal; these things are all

highly contaminated with glyphosate and children of course love these products. Things like Oreo cookies, those little goldfish crackers, those are so popular with the children. They've all been tested and found to have high levels of glyphosate in them.

JUDITH: That makes me sad to see how badly contaminated our food supply is because your research is showing it's leading us to chronic diseases. It's just opening the windows to that, depending upon our biology. So please continue with your research on glyphosates and how it affect glycine in the body and proteins.

DR. SENEFF: Yeah, well what I think what's happening glyphosate is a complete glycine molecule. It's actually a very simple molecule. It's gylcine. Glycine is the smallest amino acid only it has some extra material attached, it's nitrogen atom, so that makes it very different from glycine. It's bulkier and it's negatively charged and it's highly reactive. So it has very different properties from glycine. How often glycine is selected for it's tiny size and for its ability to maneuver... you know proteins select for glycine at critical places and there have been studies that have shown the individual proteins of that glycine is mutated because of, you know, genetic mutation you can get severe disease, even sort of nonviable.

You can get...the child can die in early life because of a single mutation in her particular glycine in her particular protein. So, I've been rummaging through the research literature finding all the proteins that have critical dependencies on glycine and it then becomes a story that links to all these diseases that are going up dramatically in step with glyphosates. I've been able to, in many cases, think about the proteins that I suspect are being disrupted in association with the various diseases, and this is how one chemical can cause so many diseases. People say how can that be that one chemical could cause so many diseases? This is how it could, by messing up glycine in the protein.

So basically, I look at the evidence from the glyphosate research in the literature and I look at the evidence from glycine in protein research and I intersect those two, along with the evidence from the statistical distribution of the diseases. To see which of these diseases are going up. You put all of that together and you get a remarkable story.

JUDITH: Hmm. You sure do. I know it opened my eyes to make the correlation between the use of these types of products and the spike in autism. I have a nursing background and when I was a student nurse I was fascinated with autism. In fact, one of my case studies was a young woman of nineteen who was diagnosed with autism. But that was unusual. We hardly heard about it. It was considered a very kind of rare occurrence during the time that I studied medicine. But lately what the John and Ocean Robbins Food Summit brought to my attention and your research has brought to my attention, is that we went from 1 in 150 to 1 in 50 births with autism, which is huge! I mean that's a huge strain and drain on our resources, on family health and family life but I don't see people even recognizing that.

DR. SENEFF: Yeah it used to be 1 in 5,000, 1 in 10,000. I didn't know anybody with autism the whole time I was growing up.

JUDITH: No, I didn't either, except when I got into nursing school and that was of course in a mental institution. But there was one and that was all that I heard about at that time.

So, can we talk about our innate immunity and our adaptive immunity because that leads us to the Covid virus and what's happening.

DR. SENEFF: It absolutely does. And I had become aware from my research prior to Covid-19 that glyphosate is a train wreck for the innate immune system. There are many proteins that the innate immune system depends on. Depends on critically, for example, to clear viruses that have long sequences ... There's a whole group of proteins called collectins and there are several of them, maybe a dozen. And they're part of the immune system and they're produced in various places. There's a couple of them in the lungs, in the surfactants of the lungs. Those collections that are in the lungs are really critical both for the clearance of viruses and other debris, various debris. They're a "clean up team" and they also, they trap things, you know from when you breathe in. They trap things and allow microphages to clear them. And they particularly clear viruses so that a virus won't be able to multiply and take over your body. And these proteins, all of them, these collectins have this long sequence of what's called GXY, GXY, GXY. It's a pattern in the protein that has every third amino acid in the glycine, a very, very glycine rich segment in these proteins.

It's the same thing that shows up in collagen. Collagen is the most abundant protein in your body. It also has this long sequence of GXY, GXY, and GXY. Collagen, I think, is getting destroyed by glyphosate and that's what's causing the epidemic we're seeing in various problems with the joints, the bones, all the hip surgery and the knee replacement surgery and shoulder problems, back problems, all these things that are causing us to take a lot of opioid drugs to handle the pain. I think glyphosate is a major player in the epidemic that we're seeing.

So, the same pattern the GXY, GXY shows up in the collagen, which is like 25% of the body's protein, and also in these collectins, which the immune system uses. There's one called mannose-binding lectins that has been linked to mannose-binding lectin deficiencies due to genetic problems has been linked to an inability to fight off viruses. So the proteins in the lungs, the proteins elsewhere in the body that are part of the innate immune system that are able to act like a vacuum cleaner and clean up all the bad stuff in the blood, including the viruses, those proteins are broken by glyphosate and they don't work and that's what's allowing, I believe, the virus to take off and infect and cause disease.

JUDITH: Well you made a comment in a recent article that you published that the Corona viruses are the common cold.

DR. SENEFF: Right. There are the causes of the common cold. There are various Corona viruses that cause, what usually is just a cold.

JUDITH: So, the difference between Covid-2 and Covid-19 is?

DR. SENEFF: Well this virus actually is a Covid-2. It's a ...it's a little confusing. The disease is Covid-19. The virus is called SARS-Cov-2 I think is what it's called. The virus is 2. But the viruses keep evolving. These Corona viruses evolve very rapidly.

That's one reason why it's difficult to design a vaccine for them because they'll just outsmart the vaccine. They're constantly evolving. It's actually really fascinating, these viruses. I would love to understand the role the viruses play in life because I believe they play a critical role. I think it has to do with evolution, that the viruses are the agents of change; that they allow the genetic code to change over time so as to react to various environmental exposures. It makes sense to me because viruses do mutate quickly and they are able to integrate themselves into our own DNA. A lot of our DNA

actually comes from viruses. The DNA that's in our own body comes from viruses so it's quite, quite fascinating, and the research behind viruses. I think this virus may even have evolved to, in reaction to glyphosate.

I mean there's just a lot we don't know. That's all speculation but it's quite fascinating to me, and I'd love to be able to, I wish I could live another hundred years and find out what new research people have discovered because it will probably be very, very interesting. I think there's going to be a lot of breakthroughs in our understanding of how our biology works and the coming decades, because we are primed for those breakthroughs. We have so much information that's available now, so readily to people around the world. You know it's just wonderful how you can just pick up the paper off the web and read it. Anybody can do that. So, people are really...and then people are sharing ideas on the web. I think it's a very creative time in our understanding of biology at this point in time.

JUDITH: Well my understanding is too, the greatest creativity sparks come from the greatest tension. So here we have this tension created by this virus that's forcing us to quiet down, get off the roads, let the earth breathe a little bit differently, clear the air of some of the pollutions that are out there and also clear our own inner pollution of busyness where now we have more time to be quiet. So I see that as a positive thing happening right now, and then, of course, innovation comes from that deep place of maybe quiet, of our attention turned elsewhere and then all of a sudden, we get that flash of insight. Who knows what's going to come from that?

DR. SENEFF: Yeah, it's very exciting. What I discovered and what that paper is about that's getting a lot of play; I mean I'm getting a lot of attention to that paper (<https://jennifermargulis.net/glyphosate-and-covid-19-connection/>) and feedback from people.

That paper, I was curious about where the Covid-19 was hitting hard. Certainly, Italy really kind of woke me up when I saw Italy, the Lombardi region of Italy really were getting huge Covid-19 infection, many old people were dying. It was quite dramatic, a very big surprise to the world, I think, when Italy got hit so hard. And that caused me to kind of look into Lombardi and study, sort of look for things that might connect to it. And of course, it is a city that has a significant problem with air pollution.

Europe in general has embraced biodiesel fuel, you know, for vehicles including for cars. I think they have something like twenty-two percent of the cars in Europe are diesel. You know they're diesel cars, driven on diesel fuel rather than gasoline, whereas the United States, I think, has only something like two percent diesel penetration in our cars. And of course, diesel is also used in trucks and what not. Diesel trucks are quite common in the United States as well.

What I had not realized until Covid-19, I had not been aware that there has been an evolution, technology based on bio-diesel fuel. I did not even realize bio-diesel existed. I was aware of the ethanol. You know the U.S. has been a leader in adding ethanol to gasoline. We get the ethanol from corn.

Brazil produces ethanol from sugar cane and the U.S. and Brazil provide most of the ethanol that's exported to the world to dilute the gasoline, sort of an additive added to gasoline in order to make it last longer, to reduce the dependency on oil basically through the use of alcohol, ethanol that's derived from corn and sugar. And both the corn and sugar of course are sprayed with glyphosate.

Sugar is...I don't know actually Brazil but in Central America there's a big problem with sugar being sprayed with glyphosate right before harvest, causing an epidemic in an unusual kidney disease that I've written about. I've published papers on this but there are others who have linked that directly to the that's being sprayed on the sugar cane right before harvest. The workers who harvest the sugar cane are getting sick at a young age and dying from kidney disease. And so, I think there's potential certainly for glyphosate in the ethanol.

But when I was looking at the pattern it didn't look like it matched with the ethanol. Because the E.U. (European Union) has less ethanol in their gasoline than we do in the United States. Italy and France and Spain are all being hit hard. Those countries actually play the leadership role in incorporating bio-diesel into the diesel fuel. So, it's a mixture of regular diesel and bio-diesel. And the bio-diesel in... Europe has actually been able to produce bio-diesel from some of the oils. They come from plant oils like soybean oil and in the case of Italy it's the olive oil because Italy has lots and lots of olive oil. Interestingly it looks to me like Italy has about ten times as much bio-diesel use as in Greece. Greece is like about one tenth as much

as Italy and Greece has a much, much lower problem, much smaller problem with Covid-19 than Italy does.

So, there's all these different statistics you can see. In the United States it's particularly interesting because our big, big outbreak is in New York City and we have another big outbreak in Louisiana and New Orleans. Those are really two huge hot spots in the United States and Washington D.C. is now starting to get, you know, fire as well. Those three cities were the leaders in the development of bio-diesel in the United States. So, I'm sort of seeing this pattern that looks like, again, correlation, right that cities that are embracing bio-diesel...New York City has something like eleven thousand vehicles on the road that are driving without bio-diesel fuel as part of their fuel supply.

The bio-diesel in the case of the United States, we've been developing technology that involves taking the remnants once you harvest the crops. So, for example corn crop and wheat crop, once you harvest the crop you have all that residue with just the stalks and plant material that's left over after you harvest it. You can take that stuff and gather it up and run it through a bio-diesel manufacturing plant and turn it into fuel, into essentially diesel fuel. It's an amazing process that they do. The question is whether the glyphosate that's truly on those plants because, for example, the wheat is sprayed right before harvest does that glyphosate survive the processing? It's a good question.

We don't know the answer. I think a lot of people would say it probably did not, and that it would get destroyed by the processing. But we don't know for sure and it's possible, I think, that it ends up in the bio-diesel fuel that then gets burned in gas tank of the vehicles and gets released in the fumes, the exhaust fumes of the vehicles on the road and then people breathe it in.

I'm suspecting, and again this is all **speculation** at this point. I'm putting the idea out there in the interest of getting a chemist to take a look because you need to do some more studying to find out if this is what's happening. That this has all happened within the last ten years of development of this and it's being increasingly promoted. People are actually thinking they're doing a good thing because the claim is that it would reduce the carbon footprint.

So, we're trying to reduce the carbon dioxide in the air that is causing this global climate change. So it's going to be very, very sad it turns out that this

is a major health problem, the toxicity of this bio-diesel fuel is a contributor to...what I would say is we're breathing in the glyphosate and the glyphosate is getting into lungs and it's causing the lungs surfactant proteins to be messed up. And the reason why I zeroed in on that was because of the studies that have been done on vaping.

This really ticked me off when I found this incredible paper on mice that were exposed to vaping fumes from the E-cigarettes. This study was done because they identified a strange lung disease that was happening among people who smoked a lot of E-cigarettes. And that lung disease has symptoms that exactly match the symptoms of Covid-19. They're very, very well matched including the dry cough and the lack of a runny nose. It's characteristic that you don't have a runny nose in both of those, a slight fever and then breathing difficulties. That's really the key thing is that "oh I can't breathe; I can't get oxygen." The oxygen level goes down, the lungs are not working, and I think it's because the surfactants are being messed by the glyphosate that is in the E-cigarettes.

And so, I started to look at the E-cigarettes to see, well what is in them? It turns out they targeted something called Vitamin E acetate as a possible cause. And Vitamin E acetate is derived from soybeans and so soybeans are GMO Round-Up readied soybeans. You can get glyphosate into that and then there's also glycerol, which can be derived from the remnants of the bio-diesel food processing plants. When they get the leftover stalks, once they've extracted the bio-diesel, they can then use that to make glycerol, which can go into the E-cigarettes.

There's speculation on my part that it's glyphosate in the E-cigarettes that's actually damaging the lungs. So that's actually the same thing that's causing the Covid-19 and people who have COPD, chronic obstructive pulmonary disease, a study showed an 18 fold increased risk of ending up in the ICU if they caught Covid-19 and so...COPD of course, smoking is the major risk factor for COPD.

It all kind of comes together into a story that may or may not be true, but it seems plausible to me and it would explain why this is happening now because of this up ramping of ...glyphosates have been around for a long time. Certainly, it's causing autism rates to continue to go up. It just went up by another 10%. It's hardly even news now because we're so caught up in Covid 19 but the U.S. just announced a 10% increase in autism and you

know those things are going up because glyphosate is going up steadily everywhere in our food and what not, in our water. But this is something new, if it's true, having glyphosate in the fumes of the cars and that can really impact people who live in cities in particular, and especially cities that have introduced the bio-diesel fuel. That's what I'm thinking.

JUDITH: And then you're tracking the demographics. You're tracking the usage of it. You also mentioned airlines that are using, going to use bio-diesel. Tell us more about that.

DR. SENEFF: Yes. Well that turned out to be interesting too. And again, this is all stuff I've just been learning in the last few weeks, you know, since Covid-19 hit.

I wasn't aware of any bio-diesel, but it turns out that in fact, United Airlines was the first to introduce bio-diesel and it was used at first in Los Angeles. And Los Angeles was the first city where bio-diesel was used. But at this point many airlines are using bio-diesel fuel and many of the airlines that service New York City are using bio-diesel. New York City has three airports; three major airports are surrounding Manhattan. You know LaGuardia, JFK and then also the New Jersey (Newark Airport) one. So, three different airports, that are major airports surround New York City. So, a lot of planes are flying in there all the time from airlines that are using bio-diesel fuel for the airplanes.

And so, I think that's another...and also, I've noticed that some of the hot spots out west or the mid-west or west I guess, in Salt Lake City Utah and Denver Colorado, those kind of look like hotspots as well. Of course, these are big cities too, so you have the complication of the vehicle fumes on the road as well as the fumes from the airplane.

We really don't know, you know? It's always a question of exactly which source, which way is the source coming in that is causing the trouble?

Another possibility is heating fuel, heating oil. I didn't realize until very recently that they're putting bio-diesel or bio-fuel...I don't even think it's diesel. It might be diesel. Bio-fuel into heating oil and that's also being encouraged lately. Some of the states are sort of promoting it, you know, legislation to give you a tax-break if you put bio-diesel into your heating oil. And so that now you can look into the possibility of that producing glyphosates that you're breathing in your home. So, I don't know if any of

these things are true but they're all kind of interesting things to think about, you know?

JUDITH: Well what I like about your research is the fact that it's forward thinking instead of looking at the benefit in the moment versus the benefit in the long run. And that's the piece I've seen missing in the way our government and our research functions. For example, when I went for my Masters I was researching cottonseed oil because it's used in food but is it really a food or is it a textile crop? And what I found was mind blowing and it was very sad for me to see some of the research out there. And I ended up talking to a man from China who was living in America for twenty-seven years and he worked for the U.S.D.A. He and I got into this incredible discussion about the fact that we're not visionaries when we create things. And if you look at the research on pesticide use in general just from when it started, the products that were left over from the war machine...

DR. SENEFF: I know, I know.

JUDITH: I mean when you look at how they're applied and that you can't have animals near some of these ornamental crops that use certain pesticides because those animals have a very high incidence of miscarriages. You have to let the fields rest before you can even graze an animal there. But we're not taught that. I don't think farmers are taught that. So we end up having to pick up the pieces after the fact instead of having that forward vision, is what I'm getting at.

DR. SENEFF: Right, I totally agree. I mean we always seem to think, oh what could go wrong? Like there's some new product and it's just harmless. They don't look for toxicity because they don't want to find it. And then when people start seeing it, they deny it because they're making money. They don't want to shut down the plant that's producing this chemical. They're looking at their loss of funds, loss of money if that chemical becomes targeted to something that's toxic and that's certainly true for glyphosate. And a lot of people are saying well we can't go through without glyphosate and that seems ridiculous to me. We did without glyphosate up until forty-five years ago perfectly fine, you know?

JUDITH: Yeah and we did fairly well without any other pesticides up until then too. Are there going to be problems, of course. But I believe nature has the solutions for everything that we're fighting in terms of problems with

growing food and producing food and fuel on this planet. And we have forgotten to look at nature.

So we have places like the Biomimicry Institute, for example, that are looking at nature to solve some climate change problems. And some of their innovation is absolutely fascinating to me. I don't know how mainstream it will get but they're at least out there searching for ways to use nature to solve climate change problems.

So Dr. Seneff, your research is extensive. The biochemistry is very deep and comprehensive. Can you give us any other insight on your research with the Covid-19, any kind of tips or some things that we should be mindful of?

DR. SENEFF: Well certainly I would recommend that everybody switch to an **organic diet** if they're not already doing that. Try to minimize your exposure to glyphosate because that will strengthen your innate immune system. What you need is a stronger innate immune system so eating, so to buy organic is highly recommended.

And also, I would say eating **sulphur containing foods**, because I think sulphur is very important for the innate immune system. And it's interesting, things like Vitamin D for example...vitamin D deficiency is linked to a weakened immune system. I believe **getting out in the sunlight** and really paying attention to the sun, to try to get sunlight exposure to boost up your natural vitamin D. Sunlight does more than just vitamin D and I've written about that and I think it's crucial, actually, for helping to strengthen the immune system beyond its affect on vitamin D. So getting out in the sunlight. As much as possible, **take a walk outside**. And then eating well, **natural foods, unprocessed** you know. Eat foods that you recognize. Fresh fruits and vegetables, meats, and dairy and sea food like fish, all of those foods are very healthy foods, so stay away from the processed foods. Eat the organic foods and natural foods and eat a diet that's high in...a nutrient dense diet, high in micronutrients.

JUDITH: You know those are all really wonderful, practical suggestions for this time. I know this is controversial, but you did mention in your article about how the use of all our flu vaccines actually diminishes our innate immune response. Would you, do you mind addressing that issue?

DR. SENEFF Well that's very interesting. I really wish that somebody were studying, like anybody who catches Covid-19 find out their flu shot history

and then, especially if they end up in the ICU or if they die, find out their flu shot history because I suspect, again I don't know, I'm just guessing, but if you are regularly getting a flu shot every year, you're more susceptible to Covid-19. And that's because it's been shown in studies...I remember a study coming out of Hong Kong where they did a controlled study where half the people got the flu vaccine and the other half didn't and they monitored them for the next nine months or so. And they looked specifically for some **sischal** virus infection and they found a four fold increased risk to some **sischal** virus in those that had gotten the flu shot, compared to those who had not. In other words, the flu shot was disrupting your innate immune system such that, although it protects you from the individual strains of flu that are in the vaccine, it makes you more susceptible to everything else, including possibly other flu strain. There are also papers that specifically mention Corona Virus. This is before Covid-19 but there are papers on the flu vaccine that show that flu vaccines inhibit your response to other viruses, including specifically Corona virus. So it leads me to believe that people who've been getting the flu vaccine every year are going to have a greater susceptibility to Covid-19. That research definitely needs to be done and I really hope somebody will do it.

JUDITH: Well I have to tell you this has been a very engaging and thought provoking discussion and I can't thank you enough for your time, and your sharing, and your expertise. I offer a transcript for every podcast and I will also link your paper that you published...recently

DR. SENEFF: Oh great, that would be wonderful.

JUDITH: so that might help clarify a couple of points for people who like to delve into more the research aspect of it. So thank you!

Is there anything else you'd like to leave us with before we sign off?

DR. SENEFF: Stay safe!

JUDITH: You too, you too. Well everyone, again, I just can't thank you for joining us at the Holistic Nature of Us. And again, I do feel inspired by Dr. Seneff's talk and her practical advice.

So this is Judith Dreyer, author of "At the Garden's Gate", book and blog. My book is available through my website www.judithdreyer.com as well as several distribution arms including Amazon, Nook, Goodreads and more.

I'd like to remind all of you again that a transcript is available for each podcast. We'll make sure we have the link to Dr. Seneff's article. Please like and share them. Let's get the word out and support each other.

And remember, **now** is the time for practical action and profound inner change so we value our world again.

Enjoy your day. Judith.