GMOs REVEALED

Episode 8
Transcript

Patrick : Welcome to episode 8 of GMOs Revealed. I'm your host, Dr. Patrick Gentempo and we have two great interviews scheduled for you today.

The first is with a dentist, you might say a dentist, what does a dentist have to with GMOs. Well, this is a very special dentist because he has a certain understanding about the oral cavity and the microbiome of the oral cavity and how GMOs would relate to that. In addition, there's a big connection between your oral microbiome and your gut microbiome and the health of the rest of your body. So, you have to watch the interview that I did with Dr. Gerry Curatola, he's a very entertaining guy, you'll see. So he's great to watch, fascinating to listen to, he's written books that have phenomenal information and so, watch that episode you're really going to enjoy it.

Following my interview with Dr. Curatola, we have Toni Bark interviewing Stephanie Seneff, Stephanie is a senior scientist at MIT. You don't get better credentials than that. And I have to tell you, you're going to be stunned by the information she has regarding the impact of GMOs and the toxic substances that are sprayed on them. And she's very much about the science, the data, the numbers and the trajectory of things. So watch that interview, its absolutely essential to understand what Dr. Stephanie Seneff knows. So, enjoy this episode.

Patrick : So, tell us your name and give us your background please.

Gerry: I'm Dr. Gerry Curatola. I am a Biologic Dentist in New York City. I have spent a good part of my professional career exploring bio-compatible dentistry while dealing a lot of comprehensive, restorative care.

Patrick : Your background, what got you to become a Biologic Dentist?

Gerry: I graduated dental school in 1983 and around that time, I felt very prepared to treat the symptoms of dental disease. But I was very intrigued by the causes. I didn't want to just be a drill them, fill them and bill them guy. So I explored alternative medicine. And I explored actually, it was the very first program in New York City, and it was a chiropractor that created this certificate program, Dr. Alan Pressman, and it was holistic health. It was a masters program in holistic health being given in events at the Pratt Institute in New York. And my wife was like, you just graduated dental school.

We're in hock up to our ears here, what are you doing? And I said there's more out there that we don't know about.

And I'm so glad, because it set me on a path to Harvard Medical Schools programs in Complimentary and Alternative Medicine in the 1990's. The symposiums given by Dr. David Eisenberg. And then other programs. I feel that the consciousness of doctors now to look at a more biologic and biocompatible manner and looking at toxicity as such a major source of disease, is something that is rising much more than back then in 1983.

Patrick : Now there's some point in time where you start to look at fluoride as, everybody look at fluoride in the public water supplies. Fluoride is what's going to help give kids less cavities and better dental healthy. What got you to look at that issue differently?

Gerry: That's a great question because fluoride is one of these, it was a sacred cow in preventative dentistry. Like when I was in dental school and we studied how fluoride works, we were like wow. You introduced fluoride and it knocks out the hydroxy element, our teeth and bones are made of an hydroxyapatite and it makes something called fluorapatite, and we thought that was stronger.

But now we've recognized, first of all Fluoride is a toxic element. It's the most highly reactive, non-radio active element in the periodic table. So it is very negatively charged. So yes, indeed, when you introduce fluoride into the body, it converts hydroxyapatite, what our teeth and bones are made of, to fluorapatite. And it's a very hard mineral. We never looked really at the physical properties. And I saw some engineering papers and scientific papers that evaluated tensile strength of natural teeth and bones and fluoridated teeth and bones, and fluoridated teeth and bones were 40% more brittle.

So it makes something very hard, but very brittle. Kind of like a porcelain cup. So my mother after 20 years of fluoridation, when she tripped on the stairs in our home, didn't have a bruise on her hip, she had a fractured hip. What's interesting is in the 1980's the orthopedist started looking at 30 years of fluoridation and we thought, they thought that they would be seeing a decrease in bone fractures and things like that, and there was an exponential increase that correlated to fluoridation in hip fracture rates.

And those studies were published in the New England Journal of Medicine, Journal of the American Medical Association. So I started to look at this and saying wait a minute. This drinking fluoridated water, first of all, it doesn't even address where most decay forms. Which is in the pits and grooves of the teeth. It works on smooth surfaces and converts that, like I said, to fluorapatite.

And then I started looking at, what does this do to the rest of the body? And we started to see cancer. Decreased IQ, lowered IQ. There's more than 40 studies now, there was 20, it's not 40, and Harvard University did a meta-analysis of those studies and found that yes, fluoride lowers IQ in children. And it disproportionally affects blacks more than whites. So there's racial disparity there in terms of the use of fluoride.

But so many, so many other things that now really frighten me. It actually frightens me because we, in the Center for Disease Control, in 2006 released a study of fluorosis. Which the orthodox dental world likes to say, well fluorosis is a cosmetic defect. It's just white spots and brown spots. That's just not true.

Fluorosis makes teeth more prone to decay. The very thing we give children fluoride to supposedly prevent. The fluorosis rates in 2006 were four out of ten children in America. 41% had fluorosis. Boston University this summer, this past spring rather, released a study, it's not approaching 59%. Almost 60% of children, adolescent children are having evidence of fluorosis damage.

Here's the really frightening part of that as well. Decay rates are rising like we've never seen before. Untreated decay is up like this. We have decay in some fluoridated communities higher than non-fluoridated. So, from a public health, you know, it was going to be the panacea for all dental decay has now become the pariah.

Patrick : Is fluoride generically all the same? Or are there different forms of it? How should we be understanding fluoride?

Gerry: That's a great question because most people don't know the truth about that. And here's the truth. We put sodium fluoride in tooth paste. And we have, and by the way, the sources that people are exposed to fluoride is all over. So people could be giving their children bottled water, but yet they're going to restaurants where food is being prepared with fluoridated water. So they're getting fluoride in a lot of different places. Which is why we have an

epidemic, a rampant epidemic of fluorosis. And fluorosis is not a simple cosmetic defect. It is a sign of a serious over exposure to this toxic element.

The types of fluoride that we put in our water would really frighten just about anybody. It's hydrofluosilicic acid generally. It is a waste product. This is a waste product that has a fluoride element in it, but hydrofluosilicic acid is highly corrosive. Highly toxic. They have to wear Hazmat suits to dump it into the fresh water supply. So we're dumping a hazardous waste product into the water, under the guise of preventative dentistry.

Whereas, it's clear fluoride doesn't work. It is not the answer to dental decay. And the type of fluoride that's being added into the water, hydrofluosilicic acid, is so toxic. It's a by-product, it's a waste product of the phosphate fertilizer industry. Can you say Monsanto?

Patrick : I was just about there, so who supplies this and who is profiting from it because ...

Gerry: New York City buys this toxic waste product for 12 million dollars.

Patrick : Just one city.

Gerry: Just one city. So they are selling toxic waste under the guise of water fluoridation. And it just gets me so angry. But there's three main sources of hydrofluosilicic acid. It's a toxic waste product from the phosphate fertilizer industry, it is a toxic waste product from aluminum manufacture, can you say Alcoa? And it is a toxic waste product from uranium enrichment, very interesting. Lots of fluoride produced from uranium enrichment. That's under the domain of the US military.

So we have some very powerful groups that have found a very convenient way of eliminating a toxic waste product that should not be anywhere in our water. I was talking about lowering IQ in children? That's only the tip of the iceberg. Harvard University, 2006, had a study on the direct correlation of osteosarcoma in male children, which is fatal bone cancer. Fatal bone cancer and fluoridated water.

Patrick : Wow.

Gerry: As a matter of fact, it was such a eerily high statistical corelation, and I found it interesting because I was like well why male children? Not female children? Well male children, it had to do with the activity of the growth endings of the bone. And how sensitive those areas are to toxic bombardment. But osteosarcoma is generally a fatal bone cancer.

Patrick : Yeah, it's nasty stuff.

Gerry: Yes.

Patrick : This is a known toxic waste product, they have to have some premise as to will the toxic part get filtered out in the water when it's going through it's refining process?

Gerry: Well they say, it used to be well, one part per million is okay. So we dilute the poison so much that you're gonna get fluoride, which is good for you. You know what? I am sitting here as a Biologic Dentist right now and it is being taught in every dental school, it is bombarded, it is almost ... I compare it to brain washing. The dental community to believe that you're crazy to think that fluorides not good. Fluorides the best thing since sliced bread. And it's a lie. It's a lie. Because this toxic waste product, we look at the rates of disease and all of the problems that are associated with exposure to fluoride, it becomes just like mercury.

You've done a fantastic program on vaccines. We look at dental mercury. We look at all these different toxicities, and then we wonder why cancer is at a rate that no one would have fathomed back even 50 years ago.

Patrick : So, this gets very interesting because you're talking about being able to see fluoride toxicity in the teeth. Are there systemic effects, because the things you can visualize are one thing. You are discussing IQ, which would be kind of a systemic effect ...

Gerry: I could stay here with you right now and just continue to rattle them off. One of the biggest problems with fluoride is its endocrine disruptor. And it's been linked to hypothyroidism. That's a study that came out of Manchester, England, University of Manchester. In the UK.

Fluoride, and here we have hypothyroidism is epidemic as well. We have an epidemic of hypothyroidism, which is very commonly

correlated to the epidemic of obesity. So we have so many people that are sick and we need to take a serious look at what we're doing. Thank you for doing a program like this because the word needs to get out there. That I'm not sitting here, I'm a clinical adjunct professor at New York University College of Dentistry. I've written papers, I've been an oral health expert to large numbers of media organizations and bodies. I am not a wacko.

Patrick : There seem to be some ominous parallels here. We're looking at a toxic substance that's being broadly distributed into the water supply. Maybe the only thing more important than the food supply is the water supply. Right?

Gerry: Exactly.

Patrick : And the fact that there are large corporate interests that are profiting from this. And have extraordinary lobbying leverage that can drive academia, that can drive political processes et cetera. And what's startling to me, because I had never heard this before until you just presented it, is that for example Monsanto profits from this.

We look at GMOs, we look at glyphosate, Roundup et cetera. And you see that whole connection and the malfeasance. We've talked about the pharmaceutical industry and the vaccines and kind of how people are blinded, literally taught to think a certain way, almost like an orthodoxy, and now we're seeing it, and I never knew this before you said it, we're seeing it in dental schools that fluoride becomes an orthodoxy that if anybody questions it they must be some kind of a whack job. But instead simultaneously there's peer reviewed literature saying we're seeing very scary correlations here -

Gerry: See you know what their answer is?

Patrick : Yeah?

Gerry: They're just getting too much. You know like, they need less arsenic.

Patrick : But you're putting it in their water. I mean ...

Gerry: You want to know a scary fact?

Patrick : Yeah.

Gerry: Flint Michigan became this big thing. Right?

Patrick : Right.

Gerry: So Flint Michigan, you had all this high lead. Hydrofluosilicic acid is so corrosive, that in old buildings that still have lead pipes, it leeches lead out of the pipes, raising the levels of lead in the water supply.

Patrick : So it amplifies lead?

Gerry: It amplifies lead.

Patrick : So if you take lead that was maybe not at what are considered toxic levels, I think any level is toxic, but whatever that data ... But it can take it and push it past the threshold.

Gerry: Exactly. In New York City they had more than half of the water fountains in the inner city schools had unsafe levels of lead. That story was on the cover of the New York Post. And it just disappeared. And what's interesting is, not to sound, I'm not a conspiracy theorist, I mean this, I'm a good citizen. But I'm really struck by the fact that recently I have been looking for pictures of fluoridated bone.

Because a lot of people they talk about fluorosis as being a cosmetic defect on the teeth. It's good for your teeth, but that's just a cosmetic defect. And now we have something 58, 59% of kids with these cosmetic defects. And I was looking for a picture of fluoridated bone and someone sent me this picture and it was stored in their computer, but the source of the picture, of the fluoridated bone, was no longer available from a medical study about skeletal fluorosis. Skeletal Fluorosis is a scarier thing because the entire skeletal system is effected, not just the teeth. And it's, the bone looks so, you look at a healthy bone and you look at a fluoridated bone, and the fluoridated bone just looks diseased.

It has these brown spots and all of that. So there's very uneven classification of the bone. And then we know it definitely effects growth endings and things like that.

But the other part of this whole fluoride story, which is equally interesting, is that you have studies that have actually shown that drinking fluoridated water doesn't stop cavities. And I find the

paradoxical study that showed there were actually fluoridated communities with higher rates of decay than non-fluoridated.

We know now that we should put the efforts, rather than putting this toxic waste product into the water, we should put these efforts into diet and nutrition. Which I have to say, I think the chiropractic profession has been at the leading edge of that. And really done a great job of understanding, and I try to incorporate a lot of what I've learned into a book that I spent four years writing, eight years in development, to try and put it all together. And understanding the fact that all you need is an alcoholizing anti-inflammatory anti-oxidant rich nutritional approach. And we create a much healthier terrain in the mouth. The greatest discovery that I had, I spent twenty years researching the oral microbiome.

Patrick : I see this sort of picture forming, you have this unique perch as a dentist, especially a biologic dentist, because you're understanding fluoride and the implications of fluoride in a toxic way. And also the political suspect circumstances around fluoride. But also, looking at mercury in fillings and saying ... So from where you're looking at oral health and it's relationship to the body holistically, you're looking at two principle toxic things that are introduced into human being, from the purview of a dentist who recognizes it's not just about teeth, it's about the whole body and how it responds to your oral health.

Gerry: Exactly.

Patrick : And so what do we see that are the common denominators here. You've got very toxic substances that are being profited by big companies who literally share little to no liability, and the thing about fluoride which is even more disgusting, it's kind of like you said, a toxic bi-product and rather than saying we have to figure out how to discard this, and pay to discard it, it should cost them money to properly discard it, they're getting paid for the stuff. And now the tax payers are being damaged by it. Paying for it.

Gerry: How convenient.

Patrick : Yeah. But I mean it -

Gerry: How convenient that they found a way to dump this stuff. You know I want to tell you one thing. I really wish fluoride was good for you. I really wish fluoride worked. I mean I'm in the business of

helping people get healthier in their mouth. But we do, science is emerging right now that is revolutionizing, it's a Copernican revolution and it has to do with a complete new understanding of the human body. That we're made of microbes. And understanding that the bacteria in your mouth actually, if your mouth is healthy, the bacteria in your mouth, in the oral microbiome, takes ionic calcium and phosphorous and remineralizes your teeth. You don't need fluoride. We do not need this. But I do, when I started discovering more and more and I became conscious to what was happening, I really was angry.

Patrick : How much momentum is there behind this new understanding that you're talking about relative to all this?

Gerry: It's huge. There are now the greatest men, even companies like Google, are putting millions of millions of dollars into studying the human ecosystem. Their looking at this new understanding of the human microbiome as changing everything. So it is a Copernican revolution. And it's just as powerful as when Copernicus discovered that we weren't the center of the universe, the Earth wasn't the center of the universe. We revolved around a sun. And Galileo was put in prison over that. The idea that we are created from microbes. And that the earth was covered with this slimy, microbial 3.2 billion years ago. The earth was covered with microbes. And what's interesting is that there's even a verse I found in Hebrew Torah, in Genesis, that god took from the slime of the earth, it wasn't the dust. We say oh the dust of the earth, and he breathed in spirit. No it was the slime and breathed his spirit into it and that is how we became mind, body, spirit.

What's fascinating about that, and enlightening about that, is the fact that even the mitochondria in our cells, they now mimic the shape of the bacterium, the cell division of a bacterium. So really, the intelligence of these genetic information is 100 times around human cells.

Patrick : As we talk about Monsanto glyphosate Roundup, which is this whole thing about GMOs and the implications, not just the GMOs themselves, but the products that are sprayed onto the plants that are GMO plants, et cetera. How does this effect what you're talking about as far as the microbiome, the oral microbiome et cetera?

Gerry: What's interesting about Roundup is, and glyphosate, is its global effect on the human body. It's not just your gut. But it's effecting

tight junctions between cells and in the mouth. By the way, I should mention that gum disease is epidemic. It's over 80% and in some cases, Americans over the age of 35 it approaches 85% of Americans have some stage of periodontal disease. Gum disease. What does that mean?

Gum disease is one of the bodies number one sources of chronic, low grade inflammation. And that inflammation has been linked to everything from Alzheimer's disease to colorectal cancer.

Glyphosate, what's insidious about it, and there are analogies to other products in the mouth as well, that are glyphosate partners. The use of powerful anti-microbials in oral care products, like triclosan copolymer. Triclosan was banned by the FDA. It's a known pesticide. It's non-biodegradable. It has lowered the ability for antibiotics to work. So it's increased anti-biotic resistance over all. And we have of course, triclosan resistant bacteria in the mouth that have been identified now.

What's interesting about these chemicals is that many of them, we haven't looked at the long term safety data. I found even the emergence of, I call it the methadone of the sugar industry. Eric Clapton said sugar was more addictive than heroin and cocaine. He said he was addicted to sugar as a kid. We live in a sugar addicted society right now. I remember as a kid, you saw Christmas candy, Easter, or Halloween get a ... Now you have like every July 4th and you have pharmacies that have two whole isles devoted to sugar products. Candy and all of that. So we come up with what I call the methadone to the sugar industry. Now we have the sugar alcohols. Xylitol. Erythritol.

Xylitol to me is another insidious Roundup like product that has been embraced by many natural practitioners. Thinking that it's a safe alternative to sugar and it doesn't spike insulin. There's a lot of controversy about that right now. But the thing about Xylitol is, it is a high value chemical, 80% of it is made from GMO corn cobs, okay. Not pretty little birch bark. Okay so even the pretty little birch bark, it goes through a process of hydrogenation. And the catalyst is a very toxic metal, raney nickel. A carcinogen. That's the catalyst for Xylitol to go through this ... And a lot of this is controlled by DuPont, under its subsidiary known as Danica. They dump a lot of Xylitol out there.

They preach that it's made from sugar. Made from sugar. The xylan bark, xylan is a fiber, it's actually not a bad fiber. But it goes through this industrialization, this catalyzation, hydrogenation. And then what you're left with is something called a High Value Chemical. Xylitol is not absorbed, nor metabolized by the human body. So, it creates a lot of gastric issues with gas and flatulence and I remember they delivered a whole bunch of Xylitol gum to my dental office. And my staff and everybody we started chewing this gum, the next thing you know we were getting abominable cramps and a lot of flatulence. It sounded like, if you ever saw the movie by Mel Brooks Blazing Saddles.

Patrick : Campfire scene.

Gerry: Campfire scene.

Patrick : But this is a sign that your GI tract is rebelling against what you just put in it.

Gerry: Exactly. It's not absorbed. So it's very disturbing to the oral microbiome. Which they were preaching as a good thing, right? You have to kill plaque and disturb plaque and plaque is an unhealthy expression of the natural human oral microbiome. It's just out of balance. So it's really about restoring homeostasis. It's not about nuking everything. This scorched earth policy. Kill germs on contact. Kill germs 24 hours a day. So we started using high alcohol content mouthwashes Listerine had. Then it was linked to oral cancer and they changed the formula and tried to get the alcohol down and all that. I remember, this is back in the '80s. They had a study, Listerine linked to oral cancer. It was a bombshell for a major US brand. And then we had companies putting triclosan, chlorhexidine, all these different things, to kill germs. Little did we know these germs keep us alive. Now we know we may be made of these germs.

Patrick : It's a war on ourselves basically, the war on germs.

Gerry: The biggest "ah-ha" moment I had as a dentist was when I discovered that the same bacteria that caused tooth decay and gum disease, streptococcus mutans bacteria, porphyromonas gingivalis bacteria, that live in the mouth basically, when they are in a balanced state, balanced terrain, they are benign and sometimes even beneficial.

So these bacteria that cause these problems are resident bacteria that are really pissed off. That's what a pathogen is. It's a resident bacteria that is really upset because it's been disturbed. You know, we try to kill it. And so we've been on this approach in dentistry to sterilize the mouth. Kill bacteria. And really, if we were able to do that, it would have unleashed ecological Armageddon. Because these bacteria keep us alive. And protect us from deadly viruses and pathogens in the world around us.

Patrick : Now when you said that with glyphosate, it causes gaps in cells?

Gerry: Yeah, what we call tight junctions.

Patrick : Yeah, so the junctions are loosened?

Gerry: Yes.

Patrick : So, what's the effect of all that?

Gerry: That's a great question.

Increased permeability. Pathogens able to get into the circulatory system. More inflammation. Lower absorption of nutrients. And the inability to absorb nutrients. Cells need to have tight junctions. It's what makes them function together as a community. This is what's disturbed and destroyed it. It's almost like creating lots of holes in a fabric. And it loosens the fabric. And that fabric can literally fall apart. And so we see this epidemic of periodontal disease, epidemic of all kinds of problems in the gut. Celiac disease. Gluten intolerance. All of these really serious, debilitating problems. Crohn's disease, colitis, all of these issues that they were like, I love the umbrella of auto-immune. Oh, it's auto-immune disease. Like it just kind of flew in from space. And yet we don't look at this toxic foundation that's all around us.

Patrick : Interesting because the auto-immune disease is the body not properly recognizing itself.

Gerry: Exactly.

Patrick : And so what would be the roots of that and I think we're starting to discover them in this whole conversation here.

You took ten years to write a book, what's the name of it?

Gerry: It's The Mouth-Body Connection. The Mouth-Body Connection is so powerful because I look at the mouth as a mirror for what's going on in the body. I mean, I diagnosed leukemia, diabetes, I mean you name it, there's everything from HIV/AIDS ... There's estimates of 85% to 90% of diseases have some sort of manifestation in the mouth. So if you look at the mouth, and you know the Chinese did this a long time ago. Because the tongue is such an amazing diagnostic organ. So they would look at your tongue. And we could see things like vitamin deficiencies. And all kinds of other systemic issues that, just from the surface of the tongue.

There has been a connection in Chinese medicine of each tooth in your mouth and it's meridian. So women that have had maxillary molar root canals, that have developed cavitation, and that's a big topic, a very big topic. I was taught when you do a root canal it fixes it and it's okay. The tooth doesn't hurt. It's still in the head, that must mean it's working. And now we know from cat scans and cone beam evaluations that we see these lesions. So what is a cavitation? It's a hole in the bone, just like a cavity is a hole in a tooth. So we see these things happening and so many dentists are unconscious because they didn't learn it in dental school.

Patrick : Well again, it's a difference between a technician I'd say, right? Which is drill, fill, bill, right? So you're a technician, you're just grinding that out all day as compared to looking at the whole human being. I remember I interviewed Dr. Bernie Siegel once, the famous cancer surgeon, and I was at his house in Connecticut and he said to me, when he used to do the entrance interviews for medical school, that the most common answer when you asked on the written application why do you want to become a medical doctor? The most common answer, "I've always had an interest in the human body."

So when he would meet with them face to face to interview them, when he got that answer, he would respond to them with, "Well you better remember a person comes inside."

Gerry: Didn't Bernie write a book "Love, Medicine and Miracles"?

Patrick : Yes he did.

Gerry: I love that book because it just really helped you understand that you're treating a person. You're treating a living being, a spirit is inhabiting that body. But you know, the book was something that I

recognized that the mouth is a mirror and a gateway. So you had this bidirectional. Which is why I have a two directional arrow between mouth and body.

We have everything from Alzheimer's disease, right? To colorectal cancer, diabetes, pregnancy complications, heart issues, stroke, all correlated to what's going on in the mouth.

Patrick : And, we take it a step further and recognize what's going on in the mouth is effected by mercury fillings. It's effected by glyphosate, right? It's effected by all of these things in -

Gerry: Fluoride.

Patrick : Fluoride in a big way. And we start to see all of these relationships start to build up. One that I think a lot of people really struggle with, and again the interventions create all kinds of havoc is GERD. So what's happening is that a lot of people start to experience this heartburn. They won't eat certain foods et cetera. But does the things we're talking about, glyphosate, fluoride et cetera. Does that somehow disrupt things that might create GERD, or heart burn ...

Gerry: Created a multi-billion dollar market for antacids and Protonix, Zantac and Prilosec and all that. You look at that and it's really treating the symptom and not the cause. So we live in this society where we constantly are looking at symptoms and not the cause. That's what I appreciate so much about what you do and these types of programs, in helping people say wait a minute, let's not look at what's on the surface, let's look at what's underneath. And that, you're absolutely right.

Patrick : Because ripple effects, right? Because taking those drugs further interfere with the body's ability to process food properly, digest food properly. There's this kind of like perfect storm that starts to form with all of these things. And it seems like, to me it's bizarre that these professions, with very intelligent people to be able to enter the profession, get educated et cetera, that they're almost like in a trance related to all this. And they dumb it down in their own minds as compared to ask questions. And this is what I think is brilliant about your work, and about your book, is that you've been asking really important questions. You've been attacking these sacred cows saying, let's not just be hypnotized here. And, that there's supportive literature, it's not even just deductive saying

logically it makes sense this way. But I'm looking at some inductive research that shows that we're doing things that are counter-productive to our intentions.

Gerry: Another thing about the book was I wanted to write this for the guy who might be on the drive-thru at a fast food place. I didn't want it to be one of these up in the clouds, there are people, there are a lot of wellness oriented people that we have, very, very interesting, it used to be 25%, we'd call them cultural creatives. They're the granola crunching, read the label and now it's approaching 60%. So we're getting over that mark, but we have a large swath of people that are miss-fed information that helps them believe their doing something wellness minded, when in actuality ... It's like the word natural. Natural, arsenic is natural everyone. Lots of natural sources of arsenic. And fluoride by the way. They have sodium fluoride florist bars, a natural, a lot of it in Texas.

But at any rate I wanted to get the guy off the drive-thru and just make an easily understandable book for him to say, "Ah-ha, I can make some simple changes. I can make some simple choices." And this guy makes sense, that wellness ... I like to say oral health is the 800 lb gorilla in the wellness room. So we can make some simple choices and changes and wake up. It's about getting people to wake up.

Patrick : One other thing that I'm sure you've thought about quite a bit is, we got the guy at the drive-thru, as you describe him, but the mother who is trying to raise healthy kids, right?

Gerry: Oh, absolutely.

Patrick : That's, the mother who is really the one who is taking control the health of the households in many respects or most respects. And I'm sure there's collaboration between parents, what have you, but ultimately if now, can you imagine the dilemma of the mother, who doesn't have our backgrounds, that persons' life, who is probably a working mother, is spent having to provide for family, take care of the family et cetera, but you're starting to catch whiffs of you need to question vaccines. You need to question GMOs. You need to question ...

Gerry: It takes courage, yeah.

Patrick : Fluoride. You need to understand that you don't want to have Roundup in your kids diet, et cetera. And now you start to put it together and say what's the low hanging fruit that I can make some changes in the household that are within my bandwidth to be able to take proper care of my family and raise my kids in a more healthy way. So I have to imagine what you're discussing in that book is good for that person.

Gerry: Absolutely. Even what you use, parents have come to me, very quick story, mid-'80s, late '80s, one of the major tooth paste manufacturers came out with a product called sparkle tooth paste.

Patrick : I remember that.

Gerry: It was bubble gum flavored, fluorescent blue, and it had sparkles in it. Fluoride fatalities in children went up 280%. Now that was before the internet so we didn't hear a lot about that. And there was a lot of damage control there. But it mandated, the FDA created a mandate to put a poison warning on tooth paste that had sodium fluoride. There's enough sodium fluoride, what their dentist says their kids need, to kill two children under five, generally in a full sized tube. So a full sized tube of tooth paste has enough sodium fluoride that is fatal if ingested.

Patrick : Wow.

Gerry: As a result, there is now a poison warning that says warning, children under six years of age should be supervised. Use only a pea-sized amount, a small amount, I mean it's a spec. They used to put the big ribbon of tooth paste. No, use a spec. A pea-sized amount. If it is swallowed call a poison control center immediately.

Patrick : Wow, right in tooth paste that you're buying at the store.

Gerry: So I have parents coming to me like, what's this? What's this poison? Tooth paste? Why does it have a poison warning? I said because poisons in there.

Patrick : How many people are reading it though?

Gerry: People are reading it, they don't know what to do, so I spent 20 years developing a natural formulation called [Riviton 00:41:09], that kids can swallow the whole tube and it's a dietary supplement. Basically it's edible. So it's prebiotic. It has xanthan gum and things like that that are prebiotics, vitamin C, cocuten, vitamin E,

methylsulfonylmethane, powerful connective tissue nutrient. And it's a product designed to foster a balancing of the natural environment of the mouth. And what happens when you balance the bacteria in the mouth is fascinating. You wake up in the morning and your mouth feels clean. Why? Because when it's out of balance you get that thick, sticky, smelly film on your teeth. Which dentists and dental hygienists have called plaque. Plaque is an unhealthy expression of the natural oral microbiome. But when it's in balance you wake up in the morning, it's a thin odorless film that's protecting you. It's helping your teeth re mineralize. Helping your gums stay healthy.

That's just a simple thing of changing what you use for your kids tooth paste. I was so frustrated because so many natural tooth pastes, Tom's of Maine, which is now run by Colgate, basically is a natural detergent. So tooth paste was invented by soap makers 100 years ago. It was natural soap for your mouth, right? You wash your hands, you shampoo your hair, you wash your clothes, you gotta wash your mouth out.

Tooth paste was really, it was very, very interesting the origins of that. Why we were using it.

I saw that in the 1970's I found a Japanese researcher who biopsied diseased gums and found that there were two anti-oxidants necessary for proper cell function, that he found that were deficient in diseased gums. Vitamin C and Coenzyme Q10, which wasn't really a vitamin, it's a co-factor in the Krebs cycle, it's grade ATP, so the cells could stay puffed up and not be all like soggy and flabby. So the more ATP that's needed, the more CoQ10 needs to be manufactured by the body. Which the body slows down. So heart, skin, gums. Important CoQ10, so those were the two actives that I patented in this dental formulation that I was working on.

And my wife got me to do this because her gums used to bleed. And we tried everything. She'd see the dental hygienist all the time. This is twenty years ago and I came up with this formulation, she started using it, her gums stopped bleeding in two days. And that became an exciting advance, that tooth paste could be a nutritional product. And you don't need xylitol. Coconut oil pulling, that's a great thing but it's a detergent process to get unhealthy plaque out from before teeth. So if you keep doing coconut oil pulling, you go from a hypertrophic biofilm, this thick, sticky, smelly stuff all over your teeth, to a desert. And really you want

to be in the middle of the target. You don't want a scary, thick, smelly jungle, nor do you want a desert. You want to be right in the middle with that beautiful robust garden.

Patrick : I personally have a special appreciation for maverick thinkers. People who are not hypnotized by convention. Matter of fact for my company the number one core value is tearing at the fabric of convention. But I also know it comes at a price as far as the adversity that must be faced. Which of course, history is replete with the people who do this. And I see you as one of these people who have really, through passion and purpose have been able to think differently and bring ideas to the world that you can get criticized for rather than thanked. But, so I want to say for the people who can witness this and appreciate it, thank you for the work that you have done and are doing in your career. And thank you for sharing it with this audience.

Gerry: Well thank you for those kind words Patrick. It's interesting, we have to have courage to stand up. I had my first run-in with the problems of the toxicities of fluoridation back about 15, 20 years ago. I started speaking about these toxicities, it was in a health magazine in my community, and another dentist went to the dental society and said that I was preaching unconventional dentistry. And the dental society sent a letter to all the dentists basically labeling with me the scarlet letter that Dr. Curatola's promoting unethical dentistry. So if your patients ask about it, it's unethical. And not only, it cost me thousands of dollars with an attorney, but they issued a retraction and an apology.

And from that moment on, I was not going to back down because I think most doctors have their hearts in the right place. But the word that you used, and the words that you used about being hypnotized and complacent to convention. Hypnotized to conventional thinking is very, very dangerous. Because I believe we are running out of time here. I mean, we have disease like we've never seen before. And I talk about how, and seeing my patients sick and cancer rates and death at a young age and childhood problems that never should exist. So we're seeing staying healthy today is like walking in a toxic minefield. It's like stepping around mines. And too many people are stepping on the mines. So, thank you for your kind words, I'm just so happy to be here with you. And I appreciate all of the work that you're doing as well.

Patrick : Thank you, so great to be with you.

Toni: Stephanie thank you very much for letting me come into your office.

Stephanie: I'm glad to do this.

Toni: Can you start off by telling me who you are, where you are and what type of position you have where you are. And what kind of work it is that you do?

Stephanie: My name is Stephanie Seneff and I'm a senior research scientist at MIT where I have been for all of my adult life. Going under graduate, graduate school and then staying on as a researcher for the rest of my life.

My research is in computer science. I'm at the computer science and artificial intelligence laboratory at MIT. And my research is in computer science but I have an under graduate degree in biology, with a PhD in computer science. And I have been, over the last six years, switching back to the biology, combining it with computer science to use computer science techniques to help me understand biology. And to form connections between health and environmental toxins.

Toni: How do you interface the biology with the computer science one, and two, give me some examples of maybe some of the papers you've published, or some of the issues you've worked on combining biology with computer science?

Stephanie: It's all based on using statistical methods. Computer science statistical methods to analyze words, word frequencies, word combinations. And you can really gain a lot of insight into things that are happening by looking at words statistically.

So I started by looking at drug side effect reports. Specifically focusing on Statin drugs and anti-depressants. There's a tremendous amount of material out on the web these days so you can just grab reports that are produced by patients. And they describe their experiences with drugs. And then you can sort of look at Statin drug reports and compare those against reports for other kinds of drugs and then you can use statistical methods to try to tease out what are the differences in those side effects. And which side effects are showing up more frequently with the Statin drugs compared to the other drugs in this age matched distribution.

Toni: So let me make sure I understand. You would take patient generated reports that have complaints of supposed side effects, or presumed side effects from the Statins. And then you compare those with other patient generated reports that complain of the side effects that they've had from taking other drugs.

Stephanie: All other drugs.

Toni: All other drugs. So then you tease apart what's specific to the people complaining about their side effects from Statins?

Stephanie: That's right.

So I started with that and then I found a huge number of side effects that were quite interesting. That all seemed to be related to getting older faster. Things like cataracts, hearing loss, hair loss, diabetes, arthritis, mental problems, physical weakness. So just basically physical frailty and cognitive decline. These are all things that you think of as getting old. So, the conclusion that I would draw is that Statins make you grow older faster.

So this of course was alarming to me because we have so many people taking Statin drugs and being a biologist I was interested in why is it that this drug would cause this effect. So the first that I had done six years ago was to look at the Statin drugs. And then I started looking at the literature. Reading of course about heart disease, and cholesterol and then about all these different papers that were experiments done looking at Statin drug effects on cells and culture. There's a lot of material out there. And I gathered all of this literature and then you can also use the computer science techniques on the literature.

You kind of play the same game, but instead of patient reports you have paragraphs from the literature. And you can get summaries of those paragraphs, you can correlations in the words in the summaries and you work all this out. And then you start to get a picture of the biology that's associated with Statin drugs. And then of course that is the picture of the biology that's associated with cholesterol and heart disease.

What came out of that was a much better understanding of what heart disease is and what's causing it. And the realization that it's actually completely different from what we're told.

Toni: Can you explain how it's completely different, that's one question. But I want to back up and ask you a question about something that you just said, which is, if Statins are being given to everyone over 40 lets say, how do you know that those complaints, those groupings of symptoms that you looked at, weren't just complaints of people over 40?

Stephanie: Right, and in fact you do have an issue because it could be just people who have heart problems, right? Because there is a compounding of the effect between the drug and the condition that caused you to take that drug. So that is actually an issue, but what you have to do then is to understand the biology so you can explain why the drug would cause this. Rather than why the condition would cause it. You have to understand what that drug is doing, and how that impacts your physiology.

This is what I did. And it was an amazing journey because it led me to a place that no one is thinking about. Which is sulfate. I should introduce this early because sulfate is my thing. Sulfate is a really interesting molecule. One sulfur and four oxygens and the body uses it in amazing ways. If the body doesn't have enough sulfate, serious problems come.

Toni: Like?

Stephanie: First of all it's the blood. I mean the blood becomes unstable. And once that's the case, then, depending upon your genetics, different organs will be targeted to supply sulfate to the blood. If your genetics dictates that it's the brain that's going to do that, then you'll have cognitive problems. But if it's the muscles then you'll have muscle weakness. Or you may get digestive problems because the digestive system is robbed of sulfate. So the sulfate is stolen from some place in the body in order to deliver it to the blood so that the blood won't have a complete meltdown which will kill you.

Toni: What would happen if the blood didn't get enough sulfate?

Stephanie: It would have no flow. You would have things like blood clots ...

Toni: So clotting, increased clotting.

Stephanie: And then you get hemorrhaging as a reaction to the clot.

Toni: Sure.

Stephanie: So you've got unstable blood, blood clots, hemorrhaging, which is something the elderly face in America. Tremendous number of elderly are being given Coumadin, which is trying to keep them from getting these blood clots. Then they end up with hemorrhaging problems. I mean it's basically, they are walking a tight rope between these two issues because of insufficient sulfate supplying the arteries walls and the cells that are suspended in the blood.

Toni: The side effects that I've read about in Statins, which is the muscle weakness, and in some cases almost looking like ALS?

Stephanie: Yes, exactly.

Toni: Would you say that in those cases, those people genetically were predisposed to then have their muscles donate the sulfate to the blood?

Stephanie: That's right, yes. And in fact, well they do much more that in that. In fact with the Statins it's very interesting what happens with fructose. And a lot of people have been talking about fructose maybe not so good. High fructose corn syrup. We're beginning to be aware that high fructose corn syrup is not something healthy. It comes of course from GMO corn, which I think is actually maybe a major part of the problem there. But the fructose itself is quite difficult. And usually the liver processes the fructose and turns it into fat. And then that fat gets shipped out inside LDL particles. But when the liver is interfered with by the Statin drug, it can no longer do that because it doesn't have cholesterol that it needs to send the fructose out.

So it takes a pass on the fructose, and the fructose then has to be taken up by somebody else. So the muscle cells take up the fructose. Fructose is actually very toxic. It's much more ... So glucose it's a glycating agent. It can cause hemoglobin A-1C when you have diabetes, you get excess sugar in your blood. And then you get glycated proteins.

Fructose is ten times as bad as glucose at glycating protein. Which is why the liver just takes it out before it even gets a chance to go to the rest of the blood. But the liver can't do that because it has the Statin drug so the muscles do it, and then they get killed by the fructose.

Toni: So they, if you measure the glycosylation of the protein, the glycation of the proteins in the muscles they would be heavily glycated.

Stephanie: Yeah, and in fact excess ... The muscles turn the fructose into lactate. And lactate is actually terrific fuel. But Statin drugs are associated with excess lactate in the blood. So that is confirmation that this is happening. And the muscle cells are also deficient and sulfate, which is preventing them from properly processing the glucose, so it's all tied together. You get the diabetes, with Statins have been shown to cause diabetes, and that makes complete sense because you need the sulfate, and the sulfate gets transported by cholesterol. So the whole thing, it's an amazing, amazing story, that works out so beautifully.

And more than that, when you start looking at the actual plaque itself, the cardiovascular plaque that's associated with heart disease, and you say what's going on there? And you read the papers and you throw them into the computer, do the stuff. And you find connections. And then you realize that what the plaque is doing is it is taking in cholesterol from LDL, the LDL is the bad guy, saving it in the macrophages, waiting for an opportunity to get sulfate, getting sulfate is hard at this point. So you have to have information to generate the super oxide, which is going to combine with the sulfur to make sulfate.

Inflammation is really behind all the modern diseases. They're starting to realize that more and more. Thus producing the super oxide, the super oxide is producing the sulfate, and then the platelets in the plaque take the cholesterol from the macrophages, combine it with the sulfate and make cholesterol sulfate. And cholesterol sulfate is a fantastic molecule that the heart desperately needs.

The heart is actually deficient in cholesterol and deficient in sulfate in heart disease. The exact opposite of what they're saying. They're saying it is an excess cholesterol problem and it's actually a deficiency.

Toni: Well we're led to believe that cholesterol is bad.

Stephanie: Yes, which is completely foolish. Cholesterol is essential to all the membranes of all the cells. The brain has 25% of the body's cholesterol. With only 2% of the body's mass. The brain really

needs cholesterol to work properly. Which is why you get all of the cognitive problems when you take a Statin drug.

Toni: And also the Statin, it blocks acetyl-CoA, correct?

Stephanie: Yeah, it blocks this critical step in the pathway which leads to cholesterol. As well as to a lot of other really, really important things. The biology depends on. So it's not just cholesterol that gets disrupted by the Statins.

Toni: It's the Coq10.

Stephanie: Yes, that's right.

Toni: To recap, because you threw out so much information, I followed and I find fascinating. The bottom line on what your conclusion, and not only your conclusion, I've been reading this from other people doing research, the bottom line on your conclusion with your work, looking at Statins end side effects and biology is ...

Stephanie: Yes, the bottom line is that the cholesterol in heart disease is a deficiency rather than excess. And excess LDL is an indication of impairment in production of cholesterol sulfate. And the plaque is actually there serving a very useful purpose to produce the cholesterol sulfate that the heart desperately needs. When the plaque is interfered with, as it is through Statin drugs, you end up with things like heart failure, valve problems, all of these things that are ... Arrhythmia's that are a consequence of insufficient cholesterol and insufficient sulfate in the heart.

Toni: Well what if there's plaque that's blocking the artery?

Stephanie: So they always talk about blocking the artery with plaque, but that's actually is not what's happening. The real thing behind a heart attack is thrombosis, which is a blood clot. So this is a consequence of the blood being unstable. So the plaque is actually very good at growing on the outside of the artery and allowing the artery to still flow. Or if the artery is blocked, the body has the ability to make collateral by pass arteries. Natural bypass arteries that will allow the blood to flow around an artery that's getting blocked. So the heart is able to, to a large degree, compensate for these fatty deposits that is building and find a way to keep on supplying the blood to the heart. Within limits of course, because you don't really, heart disease is not a good thing. But in the

context of the deficiency that you have in cholesterol and sulfate, it's a much better option to have the plaque than it is to disrupt the plaque and end up with heart failure. In my opinion.

Toni: What would be an alternative to developing plaque? What would be the right thing to do so you don't develop the plaque?

Stephanie: Right.

Toni: You have enough sulfate, what can people do ...

Stephanie: Well getting enough sulfate is the problem. And actually, that's really interesting because then I kept on looking. Okay fine, the Statins are disrupting the sulfate. What else might be disrupting the sulfate? And in fact a huge issue is glyphosate. The active ingredient in Roundup.

Toni: The active ingredient in Roundup.

Stephanie: Roundup, the weed killer.

Toni: And Roundup has been around since ...

Stephanie: 1974.

Toni: And so did we see a huge spike in heart disease since the introduction of Roundup?

Stephanie: Well, so Roundup is causing a lot of things. And one of the biggest things it's causing is obesity. And diabetes. There's an extremely high corelation between Roundup and obesity and diabetes. Roundup usage on corn and soy, GMO corn and soy, in the US, correlates very, very strongly with the rise in diabetes, obesity, kidney failure, Alzheimer's disease, autism, all of these diseases, including thyroid problems, are very strongly matched with specifically the rise in the use of Roundup on GMO corn and soy.

Toni: Is this just a temporal association, or are you saying that there's a mechanism which is understood by people in biology ...

Stephanie: Well this is the thing, exactly. In fact, you see ... I actually wasn't aware of this incredibly matched statistics until after I had written a paper on Roundup. I wrote a paper with Anthony Samsel, which was published just in April of this year, on Roundups effect on health. And again, looking at all the literature, running it through

the computer science, figuring out the connections, and then finding a remarkable story that caused me to identify Roundup as causing exactly these things that turned out to be very highly correlated. Which I had missed. We hadn't talked about that in the paper. We didn't see that correlation from the statistics. It was something that I was informed about afterwards. After we wrote the paper.

Nancy Swanson is a physicist who has published a whole bunch of plots of correlations between Roundup and many different conditions that are on the rise today in our country. Really, really striking correlations with like a .98 correlation coefficient.

Toni: That's huge.

Stephanie: It's really amazing.

Toni: That is amazing. With what you spoke about earlier, the Statins and the diseases, I mean I certainly read numerous papers, many other people are in agreement with you, is this just your finding on the Roundup and all these diseases. Or are there others, other than the few people that you've mentioned ...

Stephanie: Roundup is interesting because it's amazing to me how well Monsanto seems to have been able to keep people from researching Roundup is the only thing I can conclude. Because there was so little, I couldn't find any studies on the effects of Roundup, for example on humans. There are some studies, we found lots of studies, but we had to dig hard. And they're in obscure journals. Anthony and I really did our best to find everything we could on the subject. Because actually, so what led me to Roundup was that I had been studying autism. Really, really wanted to get to the bottom of autism. I could see that the rates were going up and up and up. And six years ago, when I also started studying the Statins, I also started studying vaccines. Because I figured, vaccines, I mean a lot of people have said vaccines might be related. There's the mercury.

I looked at the VARS database, Vaccine Adverse Event Reporting System, and very powerful to use VARS database and use exactly the same procedures that we used for the Statin drugs on the vaccines. We discovered all kinds of interesting things. And again, you go back to the literature. You study the literature. So it's always a combination of looking at the data in some data base and

relating it to the data in the literature and using the same computer science techniques on both sets of data to interpret the biology behind the things that you are seeing from the analysis.

Toni: So you're saying you are looking at one data base. Which is patient generated again, I mean the VARS reporting system is a national reporting system but it's generated from patients adverse events from the vaccinations, correct?

Stephanie: Yes. Right.

Toni: And then you're saying that you compare that to the data that you can find in the research on the vaccines or on the Roundup or on the Statins or whatever it is.

Stephanie: Or even on the symptoms that you're seeing from the vaccines. With the vaccines for example we related it to of course autism. I mean, and others have shown this too. For example we found .001 as a P value for the likelihood of this distribution occurring by chance. Which means it's extremely unlikely that it's occurred by chance. In looking at the relationship between the Hepatitis B vaccine and autism.

Toni: Many factions of the government say it's a genetic epidemic.

Stephanie: I know, and I find that very frustrating. Because they're spending so much money, even here at MIT, a lot of money is being spent on the genetic aspects of autism. And looking for the genes that might be causing autism. Which I think is really, we are learning something from the genetics. Because you're finding out which genes are being hurt by the environment, is what you're finding.

Toni: So which genes may be activated or suppressed or altered from environmental triggers?

Stephanie: Exactly. Yes, and then I think the environmental triggers will actually cause the genes to mutate as an attempt to try to find some other way to work that's going to work better than the way it is now. Because in the context of this environment that gene isn't working properly. It's being disrupted. And so those genes that are being effected are the ones that are under siege by the environment.

Because that's actually one way you can point to sulfate. So I got to sulfate both from the Statin drugs and from the vaccines. It was

really interesting that I was studying autism and I was studying heart disease and the two studies merged into the same story, which was sulfate.

This is what's bad, I have identified, really, three key things that I've identified that are really devastating in a modern environment. For the very reason that they are considered safe. Aluminum, Statin drugs and glyphosate. Glyphosate is Roundup.

Toni: Okay so you've done a lot of this, I would say that your research has a lot of hot buttons. How are you received at MIT? And are there people trying to kick you out because you're bucking the industry?

Stephanie: Remarkably MIT has been very good to me. And in fact, the head of our lab of C Cell has invited me to give a talk in front of the, of all the professors. A 15 minute talk at our offsite meeting this past June on glyphosate. On Roundup. And so I have not had anyone I can't do this. I've got funding for it. So, things are going well.

Toni: So you have funding for all of the research you've spoken about up to this point? You have funding for?

Stephanie: Mm-hmm (affirmative)-

Toni: I'm assuming that the funding is not from the pharmaceutical or food industry ...

Stephanie: No, it's from a computer company.

Toni: It's from a computer company?

Stephanie: Yeah. In Taiwan. So I was pretty much protected from all of this, fortunately.

Toni: And they like what you're doing?

Stephanie: Yes, so they like the computer science, the idea of applying computer science in order to understand biology. Using computer science to analyze the literature, and analyze the data that's on the web. They like all of that.

Toni: And does MIT, I mean, I'm just curious if this department had, if there's people that have a lot of funding from a pharmaceutical or agricultural industry.

Stephanie: Luckily, and I checked this out, Monsanto has given very little to MIT ever. And I don't know that they're giving any money to MIT right now. So I'm really glad about that, because I think many people, I've heard from people from agricultural universities who have said that they absolutely can not touch glyphosate because of Monsanto funding.

Toni: Isn't that interesting? You're telling me that you have colleagues that work universities that have a lot agricultural science going on, and those universities -

Stephanie: It's off limits.

Toni: It's off limits.

Stephanie: I think glyphosate is completely off limits. Which is why it's not being studied. I think Monsanto would be terrified for people to find out. I think they must, they can't, I can not imagine that they don't know how bad their product is on our health.

Toni: Who approved glyphosate in Roundup? Who approves it? What studies were they basing the approval on that it was safe to introduce into [crosstalk 01:07:58]

Stephanie: The EPA. We basically, Monsanto has done studies for three months showing no harm. There was a researcher in France, Seralini, who did a study over the entire lifespan of rats, and showed that exposure to glyphosate, over the lifespan caused all kinds of problems in terms of tumors and early death, uterine problems in the females, just generally a lot of issues for these rats. If you look over the entire lifespan. But the Monsanto studies always look over only three months. And Seralini didn't see his problems until starting at four months. After three months things were fine, after four months they started to degrade.

Toni: So the EPA approved glyphosate, or Roundup, based on Monsanto's own short-term study?

Stephanie: Right.

Toni: And that was it?

Stephanie: Yes. And what amazes me is that the evidence is so strong, in my opinion. From again, the obscure studies that are being done and reported in the obscure journals. There's quite a few of those that

at sort of cells and culture. For example, you can show that in parts per trillion it will cause breast cancer cells to multiple. So it's inducing tumor growth. In parts per trillion, which is extremely small, minute amounts.

Toni: There's a conundrum that I'm hearing, is that the university's that have agricultural science departments can't do these.

Stephanie: Their hands are tied.

Toni: Their hands are tied. So they can't do this research.

Stephanie: Right.

Toni: So the research has to come from outside agricultural science.

Stephanie: That's right.

Toni: And then when those papers are published, they [crosstalk 01:09:45] The industry can point their finger and say well they're not experts in the field.

Stephanie: Exactly, I think that's exactly the game. Or you publish it in a journal that is not in their inner circle of respected journals which they can police. I believe they must be making sure that all the journals that they will claim to be prestigious are the ones that they're going to make sure that these things don't get into those journals. And therefore you're publishing outside of that prestigious inner circle. And then they can say well you're publishing in a journal that's not prestigious and therefore we're not going to ...

I think there's a wonderful thing going on right now with open access journals. I think this is so terrific and I think really interesting papers are coming out more and more. And these journals are publishing papers that are available to everybody. Most of the journals, and the prestigious journals are locked behind a pay wall. You have to shell out 40 bucks to read one paper. Unless you've got access to libraries from universities and things like that.

Toni: Well where are these people getting their funding to do the research? I mean, you're lucky.

Stephanie: Yes.

Toni: You got a Taiwanese computer company funding you.

Stephanie: Yes.

Toni: But I would say that's probably not common.

Stephanie: That's probably very, very unusual, yes.

Toni: So who is even funding, who can afford to study something that bucks the industry?

Stephanie: Well in fact, I think an interesting idea is to use, and I have been considering this, is to use crowd source funding. Just like you're doing for example. Crowd source funding would be the way to go.

Toni: People are doing that with research. I have some ...

Stephanie: Yes, well we've been thinking about trying to do something like that. We've been talking about it. But we haven't got it off the ground yet. But we're considering that.

Toni: So I see now though the conundrum ...

Stephanie: In fact Seralini got funding from the opposition to, the sort of GMO, anti-GMO community. And of course Monsanto tried, has worked very hard to discredit his work. This paper about the rats. And part of his attempt to discredit was because he got funding from the anti-GMO movement. So it's really ironic that ....

Toni: But I see the conundrum which is if you can't even get funding and you're at an institution which should be studying Roundup, right?

Stephanie: The agricultural ones are the ones that should be doing it. And I don't think any of them will.

Toni: That's amazing.

Stephanie: It's really disturbing. Now if you look at, for example, Argentina, it's just some really interesting things coming out of Argentina right now in terms of the health of the kids that are being exposed to the Roundup that's being used on the GMO corn and soy. GMO soy, they have massive GMO soy productions in Argentina right now. And the people who live in those agricultural areas are getting a lot of health issues with their children.

Toni: Such as?

Stephanie: Children are being born with many unusual birth defects in Argentina.

Toni: That live in the area ...

Stephanie: That live in the area where there's a lot of Roundup being used on the GMO soy.

Toni: Right, and of course, so if you have GMO, then you are actually using more Roundup, correct?

Stephanie: Yes, this is right. And this actually the exact opposite of what they said would happen. So, they had said by having the GMO soy you would use less, but in fact the amount of Roundup that's being used, for example even in America on the corn and soy, is just going up and up and up over the last ten years.

Toni: Why is that?

Stephanie: They develop a resistant weed. In the context of the engineered crops, the weeks become resistant to Roundup. So you spray the Roundup the week doesn't die. So you have to put more Roundup. Or you have to then add some other toxic chemical like 2,4-D, or Atrazine, some other weed killer on top of Roundup in order to kill these obnoxious weeds that won't die.

Toni: So if Argentina is now saying that their children are being born with birth defects in the areas of the farms growing this GMO corn, or soy.

Stephanie: Soy.

Toni: Is the government doing anything? Is there more action going on in Argentina than here in terms of waking up and seeing there's a problem?

Stephanie: I don't know. I think not because I think Argentina is making an enormous amount of money on the GMO soy. They're shipping it out all around the world. They only use about 10% of what they produce. And it's been kind of a life saver for them in terms of the economy because they were struggling. And then by switching from, and in fact it just kills me that they switched from grass fed beef, which is something that is a really, really healthy food, to GMO soy. As their major product. So it's really, really sad.

Toni: It's one big web. One problem leads to another problem. One solution leads to another problem. Then they create something for the solution it's another problem. So where is your work now? Where are you headed? Are you working on a paper putting all this together? What's in the future?

Stephanie: I'm completely overwhelmed. I'm working on several papers in parallel, some of which are under review. Some of which are back from review. Others that are being prepared and haven't yet been submitted. I have papers on all these different topics that I'm working on.

Anthony and I have another paper on Roundup, on celiac disease, which is under review right now. And we found an amazing number of links between Roundup and Celiac disease, gluten intolerance. Which has all of a sudden sprung up out of no where, we have all of these grocery stores with the gluten-free section because so many people are intolerant to gluten.

And what people don't realize is that wheat is not GMO. But there's an increasing practice lately of spraying Roundup on the wheat right before the harvest. And this allows it to ripen, it kills it, and then it ripens quickly and releases its seed. And you get an improved harvest. It also cuts back on the amount of debris you have to clear.

Toni: Wait, it kills it and then it ripens it?

Stephanie: Yeah, it's really amazing that you would spray something on the crop intentionally to kill it. Right before the harvest. And as the crop is gasping it's last breath, it releases its seeds, so it goes to seed, aggressively, and you get a better yield.

And on top of that, it has less residue because it dies right after you harvest it. And they're getting a head start on next year's weeds by using this Roundup at that point. Right at the end of when they need to have ... They no longer need to have that plant living so they kill it right before the harvest. So the Roundup ends up in the wheat.

Toni: And you're saying the way the Roundup affects the villi in the chest ...

Stephanie: You mean the digestive track, yes.

Toni: The digestive track.

Stephanie: Yes, absolutely. The Roundup binds to the wheat I think. And that's what causes the wheat to be allergenic.

Toni: Interesting.

Stephanie: So we just looked at all these different features that are associated with Celiac disease. Celiac is a very complex disease and it has lot of different aspects to it, other things that are problematic in association with Celiac disease. But then we can show that Roundup can also be connected to those things. So we did a whole bunch of connecting the dots in this paper, which has not been published yet. So we have to see if it's going to make it past review.

Toni: Have you received any phone calls, I mean, when you've published your papers, do you, does the media call?

Stephanie: Not the media so much. But lots and lots of people from all walks of life. And that's been really quite over whelming, but also quite interesting, the people that I've contacted. I've been talking on several phone calls with a veterinarian from Pig country in Iowa. He's a veterinarian in Iowa and he's been taking care of the pigs in these big farms that have these CAFO's. And the pigs are having all kinds of problems with their health in association with eating GMO foods. And so one of the things he does to treat the pigs is to put them on an organic diet. And then they get better

Toni: And then they get better.

Stephanie: Inflammatory gut, so this is where it gets, you're seeing the same ... I'm also looking at horses and I've been in touch with someone who is an expert on race horses. She breeds them, she raises them. And she's very concerned about the race horses and all the problems they're having lately. And I've been looking at the problems they're having and linking them up to human problems. So I'm planning on writing a paper that shows how the connections between the problems the race horses are having, the pigs are having and the humans are having, they are all connected to the GMO crops and the Roundup in them, I suspect.

Toni: Have you received any calls from veterinarians regarding the work you did with vaccines?

Stephanie: It's a good point, because they have issues with vaccines as well.

Toni: They do, but I have to say that one of my patients, probably twenty years ago was a veterinarian, and he was shocked that vaccines for children had thimerosal because he said that it was removed from veterinarian vaccines in the '80s because it caused mad cow behavior.

Stephanie: Wow.

Toni: Kind of weird behavior. And I just recently brought one of my cats to be spayed and the veterinarian there said that they have clean vaccines and dirty vaccines. And I said what's the difference? He said, well dirty vaccines have aluminum and clean vaccines don't. We always try to get the clean vaccine. And I said wow, we don't have that [crosstalk 01:18:52]

Stephanie: I am thinking that the animals may actually give us answers sooner than the humans will. With respect both to the foods and the vaccines.

Toni: Because it's a shorter life cycle and we can see more clearly, is that what ...

Stephanie: That's right, yes. And also maybe we're a little bit more careless too. Because I know the animals are allowed to have a lot more Roundup, the residue limits are higher. Significantly higher for the animals then they are for the humans.

Toni: If it's for the animals and their feed animals ...

Stephanie: I know.

Toni: Then humans are getting it.

Stephanie: Exactly.

Toni: Because they're getting the residue.

Stephanie: And they have no idea how much because they're not measuring it all in the animal products. They're hardly ever even measuring it in the crops. Anthony and I were writing our paper, we were trying to get some evidence of Roundup in the food. And the only thing we could find was 195 page document published by the US Department of Agriculture in 2011 on pesticide usage in crops. And measures of

the foods to see how much was in there, the residues. They had all of this material in there. We searched the entire paper, we found one line in the entire document on glyphosate. But that one line was very powerful. It was on soy. 300 samples of soy. And they looked at whether there was glyphosate residue and how much, and they found it in over 90% of the 300 samples. And they found AMPA, which is a glyphosate breakdown product, in 96% of the soy. So basically it's all over the soy.

Toni: Does it bio-accumulate? Does it ...

Stephanie: Well they claim that it gets broken down fast in the soil, that it gets broken down fast in the body, but this is not at all proven. And in fact in certain soil types I've been told by some people who have contacted me, that it can stick around for a year in the soil. Or it binds to all these important minerals. And one of the things that I think is really a problem is it deletes the minerals. And so part of what you're seeing in the health issue is a severe deficiency in one of these rare minerals, like cobalt, or molybdenum. Things that you don't really think about. And that the body would expect to have in just minute amounts. But even those minute amounts are not there.

And particularly when you go through the processing that we go through with these foods.

Toni: Are we seeing the trace mineral deficiencies in the animals that are eating the feed?

Stephanie: I think that's part of what's causing all of their problems. Their gut problems and everything else.

Toni: So my question is, if you eat pig, or cow that eats ...

Stephanie: Then if that food is also depleted, presumably, right?

Toni: Well not only that, I mean are you getting the bio-accumulation? Are you getting the Roundup that they ate?

Stephanie: I know. I know. We have no clue actually. I don't think anyone has measured that.

Toni: Have people tried to look at this in research? I know with GMO seeds that I've spoken with some researchers who said they can't even get the seeds to study.

Stephanie: Yeah.

Toni: That they won't ...

Stephanie: Anthony and I are trying to do some studies on GMO and on glyphosate residues and also the effect of glyphosate on corn, GMO corn. Anthony's actually doing some experiments and getting some interesting early results. We haven't published that, it's another paper but that's coming along sooner or later. It's expensive to measure Roundup. So one thing is, we're paying for it out of pocket actually.

Toni: Wow.

Stephanie: Thousands of dollars, Anthony and I are. To get these measures of glyphosate residues in the corn that he's growing. So it, you know, you can't get the funding. If you're going to pay for it out of pocket you gotta send it off, very few labs will even do it. And it's expensive, so it really is difficult.

Toni: The countries that have banned GMO. Did they ban GMO because they did these studies? It seems like the countries that use the most GMO are not the countries that they're supposedly designed for which is impoverished countries. It's the US and Canada that utilizes the most GMO ...

Stephanie: And we don't have any GMO labeling in these two countries. Whereas most, many of the other countries in the world have the GMO labeling requirement. And Europe is much more sensitive, much more aggressive about protection from these things.

We have Monsanto headquarters in St. Louis, and I think that's a lot of it. It's just that we're really in deep. We're in long and deep with this notion of growing these crops by just kind of killing off everything except the one mono crop that you want to grow. The efficiency of it. The economical ... You're basically getting ... We pay much less for our food than most other countries. We get cheap food. Processed food. And extremely poor quality food. With severe deficiencies in micronutrients.

Toni: But we do pay the price.

Stephanie: We pay the price because of our medical [crosstalk 01:23:40]

Toni: We spend more on health care than any other country ...

Stephanie: I think our health care is out of sight just because we're sick. And we're sick because we're not eating properly. And the doctors don't seem to have any interest in nutrition, which is shocking to me. Because nutrition is huge ... the way to be healthy is to get good nutrition. And that doesn't just mean eating processed foods. It's just so depleted in the essential nutrients.

Toni: Well most doctors think the way to get healthy is to take a lot of vaccinations and a lot of medications, right? I mean, it's ...

Stephanie: The whole system is geared on anti-life. You basically, you kill off the microbes in the soil even. And you kill off all the pests that might eat your plant. And then you vaccinate to kill off all the microbes that might infect your body. You take all these drugs, which are interfering with life in the sense that they're disrupting some enzyme somewhere that's probably very critical to a whole bunch of different functions. The whole thing is just interfering with life. It's such a strange model.

Toni: I've never heard anyone put it that way. But wow. I mean, I've never thought about it that way until you just said that, but it's ... The soil organisms are so important for us. They're so healthy. People go out of their way and buy soil organisms to replenish their bowel floor or their gut floor.

Stephanie: I mean the gut floor, we have 90% of the cells in our body are foreign. They're microbes. They're not us.

Toni: And we're killing all of them.

Stephanie: They out number us 10 to 1. And we just, we eat all these things that just mess up our gut bacteria. That's the whole thing with the Roundup, that it kills preferentially the beneficial bacteria. And lets the pathogens over grow. And then you get into all of this inflammatory gut. And then from there you go down hill with all kinds of other problems.

Toni: Well and then you get infected and then your immune system's not as good ... Right. Same with viruses and bacteria are everywhere, but the focus is oh let's kill all of them. But that's really not the right approach.

Stephanie: When you start to realize the whole system and the way it's ... I have come to appreciate that biology, we live in a symbiotic

relationship with all the other specifies. And all of them, even the pathogens, are actually doing something good for us. And this is something I'm really excited about lately that I've learned about the flu vaccine. And I'm actually going to be giving some slides on that in November. I'm giving a whole day seminar in November on all my ideas about sulfate and everything else.

One of the topics will be the flu virus. And what's really interesting about that virus is that it goes into the muscle cells and it reprograms them to basically hand over their sulfate to the flu virus. And then the cell releases those viruses and they carry the sulfate on their backs and they deliver it to the blood. So what's happening is the flu virus is rescuing the blood from a melt down. And when you look at it that way, you think oh my goodness, when you get sick with the flu, it's actually helping you out because your blood desperately needs that sulfate and the flu virus is the messenger that's allowed to deliver the sulfate.

Toni: Is that just influenza? Or is it a lot of ...

Stephanie: Well then it starts to be a lot of other viruses too. Once you see that with flu and you start to look and then ... So chlamydia and pneumonia is really amazing because it's a virus that shows up pneumonia, it also hangs out in the cardiovascular plaque and it hangs out in Alzheimer's plaque. Chlamydia and pneumonia. And this microbe is really interesting because it makes heparan sulfate, a particularly important sulfated molecule. It makes a form of that using a unique set of enzymes that no other species has.

Toni: So you're saying it's a good thing to get chlamydia and pneumonia?

Stephanie: It has a unique way to make heparan sulfate that probably gets around, for example, deficiencies in some critical nutrients that we need in order to make it. So that this organism can make it for us. Where we fail, it can succeed. And if you start to look at all of the organisms that way you start to see how that works.

Toni: So that if your immunity, if you have good immunity, so you're healthy. That you don't even necessarily notice you have these things? Or you might have a mild version?

Stephanie: Right, because when you get the Measles, when some kids get the Measles and they've got spots all over their body and other people just barely have anything, that's a reflection of the degree to

which those people are deficient in sulfate. That means those are just rescuing them. That's what I'm suspecting. When I look, I'm starting to work all this out, and I still have to work out a lot of the details and each case you have to study it carefully. And sometimes you can't find it. But it's looking that way to me like everything, and infection then, if you think about if the gut is unable to transport, say cobalamin, which is a very big molecule, because it's broken. The guts broken. Well, so you could transport the cobalamin by having it be carried on the back of a microbe. That breaks through the leaky gut. So in a way, the guy leaks in order to let the microbes in because the microbes can carry important nutrients to your blood that it desperately needs.

Toni: So you're saying we evolved with microbes, evolution evolved, it included microbes in a lot of our RNA and a lot of our own bodies are foreign ...

Stephanie: Right. I think that in fact you're going to find that viruses are a part of the whole evolutionary process. That life goes all these lateral mixes, you know that things are shared globally among all the species. And the microbes, especially the really tiny ones like the viruses, are really powerful for helping you to get the new DNA that you need to be able to evolve.

So these are sort of radical ideas that have been promoted by some researchers. But there's a lot of novel ideas out there in biology right now. I think biology will have a major revolution within the next ten years. Because I can see, as I read all these things and find all these really interesting pockets of research that are going on with really original ideas, they're all starting to make sense in this kind of notion of a symbiosis among all the species. And that we are really, in some sense, a home for the microbes. That's our biggest role in our life is to provide a safe haven for those microbes. But then when we don't succeed in doing that we get into all this trouble with illness. Because our gut is not a safe place for them to live anymore.

Toni: Well what you're saying also is that this is ... It makes sense what you're saying from an evolutionary standpoint. I mean if you believe in evolution you believe that things survive for a reason. We incorporated RNA from viruses for a reason, that we have bacteria living in our gut, foreign bacteria living in our gut for good reason.

Stephanie: Very good reason.

Toni: And I know that people who are prone to strep throat, people think that they're exposed and I always explain to my patients, one out of five people carry strep group B. But you can actually take strep salivarius as a probiotic. The normal strep, because we should have strep on us, and in us. So if you take the normal strep it doesn't make room for the more pathogenic strep. But the reason that so many people are lacking that could be the Roundup, could be GMO food, the glyphosate could be [crosstalk 01:30:23]

Stephanie: And all the antibiotics.

Toni: All the antibiotics they use for all kinds of things that they really don't need them for.

Stephanie: Yes, right.

Toni: And so it is really all, I mean it might be that it's all a disruption of our flora. Our normal flora. Which might include things that we think are pathogens. Or bad for us. But really it's one big ecosystem and we're disrupting it.

Stephanie: I sort of now think of the pathogens as the ones that need to go into the body to deliver things. Because the body is so defective in its own ability to produce those things itself. Or to deliver them itself. So the body is so broken that these pathogens have to come in to help us out. This is the way I'm framing things these days. And it's been really rewarding to do that. And then to go back and look at the research literature to see if it can fit. And this is a process that I'm involved in, exploring.

Toni: It's very novel, and are there other people? Are you alone in this venture? Do you have good company in this venture?

Stephanie: I have come across a few websites where people have toyed with that same idea, which was very pleasing to me to see that. But I can't, but no, it's very few, very few.

Toni: Well certainly, anti industry, I mean it kind of disrupts the notion that we need more and more drugs. And newer and newer generations of antibiotics. And more pesticide. I mean if, if really we're a part of the ecosystem we should be balancing the ecosystem. There's no room for these high tech chemical solutions.

Stephanie: No, we should be pro life rather than anti life. And I think this is what we're going to finally realize and I just hope it won't be too late because it's very disturbing where we're headed right now. But I think a lot of the species on earth are threatened by our notions of how to manage our food and our medicine and everything. We're just anti life. With the vaccines and the antibiotics and the antibacterials soaps and all the chemicals that we put on the food to try and kill off everything. The pests. The insects. The weeds. We just want to kill everything off that isn't the mono crop that we're trying to grow. And as a result we're basically killing ourselves as well because we're being exposed to all of these chemicals. And anti life policies that prevent us from being healthy. Which is then why I think we have such a huge medical crisis in this country. Without of control medical costs that will possibly bankrupt the government.

Toni: It's a huge burden on the government, clearly. All of our health issues. Everybody on medicare/medicaid, the government has to help to pay for their medical treatments and support them. Why isn't the US government funding the research? Why do you have to go out to Taiwan to appeal to a computer company in Taiwan to get funding for research that might down the road, or probably would help reduce our health care costs in this country?

Stephanie: I know.

Toni: And save lives.

Stephanie: Yes, well I actually have given up on getting money from the US government for this kind of work because I just feel that they're so connected to all these industries that are causing these problems. The drug industry, the vaccine industry and of course the food industry. The chemical industries. I just don't think that it's possible to get money from the US government for this.

Toni: Have you tried? Have you filled out grant ...

Stephanie: I haven't, I mean in part that's because I had the funding, right? So it doesn't work that well I guess to use that argument.

Toni: The funding kind of fell into your lap?

Stephanie: Yeah. Right. I was lucky in a way. And I was able to repurpose the funding for this. And the company didn't object. Because the

company wasn't originally funding me to discover all of these problems with our health and all these ...

Toni: But they've been fine with it.

Stephanie: So far they've been okay with it.

Toni: Has anyone from the government, I mean you're in Boston, you're not in DC but, has any faction of the government taken a notice of your work and contacted you or shown an interest?

Stephanie: I would say not. Other than very locally, I was very actively involved in Hawaii, in Kawaii, and the recent passage of the bill 2491, which was trying to put restrictions on the chemical companies that are building in Kawaii, they're developing new GMOs that will be resistant to various other herbicides and whatnot. And using a lot of toxic chemicals, including a lot of Roundup on the fields that are in close proximity to schools of young children. The children in those schools are getting sick. And so I was very actively involved in that campaign and met with people in the local Kawaii County government. And even Kawaii the state would have nothing to do with it. Even the Kawaii at the state level is not reachable I think, in this issue. But at the county level there's been a tremendous fight going on against the GMOs in Kawaii. And I'm very much in admiration of what they're doing there.

I think everything has to be done at the extremely low level. And of course part of the game is to control the top and then to take away the power at the bottom os that they can't do it. This is the game I think that they're playing.

Toni: So centralization of power. I was under the impression that Hawaii voted to ban GMOs, or there's something recently.

Stephanie: There's something going on in the big island of Hawaii. And then the Kawaii thing is this not ban GMOs, they would love too, but they're basically putting restrictions on the companies. There are several companies that are developing these new GMOs.

Toni: So new GMOs down the pipeline.

Stephanie: Yes, research [crosstalk 01:35:55]

Toni: Can you tell us anything about that? Do you know specifics?

Stephanie: I don't know specifically what they're doing, but I can guess that their developing additional ... So for example you've got GMO corn, which is Roundup ready. And then because you're getting these resistant weeds, then you have to put 2,4-D and all these other kinds of things, Atrazine and whatnot. So they're probably developing additional resistance to one of these other herbicides on top of Roundup. Which would mean then that you could freely spray both of those on that crop and it won't die. And if they succeed in doing that I hesitate, I can not imagine what that's going to do to our health once we're getting both the Roundup and the other chemical combined on these foods. Because they often synergistically much more dangerous than either one individually. They work together to increase the toxicity of each one. So I think that's really disturbing. And first of all it's disturbing to the people there who are being exposed to the chemicals. And getting sick.

Toni: Wow. Yeah, it's big news. Especially with Argentina we saw the children get sick.

Stephanie: I'm hoping that there maybe enough coming out of those, what's going on in those places where they're getting really up close and personally with the chemicals, that hopefully, eventually that knowledge will get out to the world that these things are toxic. Because that's the way you're going to discover it. Through these intense exposures.

Toni: So do you want to tell us how to improve our sulfate levels?

Stephanie: Well there is a critical thing that I would like to bring up, which is sunlight. I think sunlight is vital to health and one of the industries that we haven't talked about is the sunscreen industry. And they have managed to grow tremendously over the last 30, 40 years. We use 30 times as much sunscreen now as we did 30, 40 years ago. In step with a 2% increase in skin cancer every year for that same period.

So while we're using more and more sunscreen, we're getting more and more skin cancer. And so everyone says use more sunscreen, you're not using enough. But in fact I think the sunscreen is actually causing the skin cancer. And a critical reason is because in the high-end sunscreen contains aluminum. And aluminum disrupts the skins' ability to make the sulfate. So it's not just the vitamin D, but it's cholesterol sulfate and Vitamin D sulfate that are made in the skin upon sun exposure.

Also in the peneal gland behind the eyes. Very, very important to provide sulfate to the brain. So sunglasses. Sunglasses and sunscreen are very disruptive.

Toni: So even mechanical sunscreens, wearing a shirt that blocks the sun.

Stephanie: Yes.

Toni: Again, this is contrary to what the industry and what the medical industry tells you, which is oh you shouldn't get sun on your skin, it's so damaging. I mean I personally don't use sunscreen and I never have, but this is what most people say.

Stephanie: I know. And young parents pay very good attention. I had to work really hard, when my first granddaughter was born, she's now 13 years old, and her mom was told by the doctor, oh make sure as soon as she's 6 months old start putting the sunscreen on. Even keeping her out of the sun before 6 months. Make sure she's always in the shade. Get into the habit of having her get up in the morning and put the sunscreen before she goes off to school. I was really beside myself with that. And I had to find everything I could on the web and send her material to tell her no, this is not true, don't let this happen. Luckily they listened to us. And all my grandchildren don't use sunscreen. They have to ask, they have to explain to their camp councilors that they will not put the sunscreen on because their parents won't let them. They have to get a written permission not to use the sunscreen.

I mean it's amazing to me. Sunscreen is really a serious part of the problem. And that feeds directly into the glyphosate because it disrupts the ability to produce the sulfate in the skin. Which then is going to further disrupt the bio-availability of sulfate to the blood.

Toni: So the best thing is to just avoid getting burnt.

Stephanie: Yes. Of course you don't want to get burnt. But you can build up a nice tan in the spring and then you can handle the summer sun as well. And that's the way you're supposed to do it. I mean when I was a kid, that's what you did. Everybody did that.

Toni: Right. I mean now there's a big move, and that's a whole other conversation to getting rid of pigment. And the pigment is there, the hyper pigment is there to protect you. [crosstalk 01:39:54]

Stephanie: Yes, exactly and it does a really good job. Much better than the sunscreen.

Toni: It does a great job.

Stephanie: And the sunscreen of course with the aluminum is disruptive. So not only is it blocking the UV, which is then of course preventing you from making vitamin D, but it's also aluminum and retinoic acid are both disrupting the sulfate synthesis.

Toni: Wow. It's kind of like everything you thought was true ...

Stephanie: Is false.

Toni: It's possibly false.

Stephanie: It's pretty much the case. It's truly, truly amazing.

Toni: So, it's interesting you brought up your grandchildren. I mean, how does all this knowledge now, how do you take this knowledge and then use it, or how does it affect you as a mother and a grandmother and a wife? It's scary stuff ...

Stephanie: It is. And of course I am to some extent frustrated because of course my children and my grandchildren are all hearing all this other stuff from everybody else. And so they have to question is mom right? Or not? Right? You don't necessarily persuade them. Even though you, you've studied so much and you know so well, all the factors are getting worse as far as I see. No one seems to be waking up to the idea of using less sunscreen or getting fewer vaccines or eating organic food. Organic food is improving, but at the same time pesticides are going up and up and up. If you project from the growth of autism over the last six years, you can figure that about half the kids are going to have autism by the quarter century mark.

I think we're not going to be able to do much else. Beside take care of those kids. I mean our country is going to be so crippled by the care and of course all the pain and anguish of having children with this quite debilitating condition, is unimaginable to me. I mean I

just can't ... Almost you can't cope with what the future's going to bring.

Toni: Or when you think about your grandchildren having children.

Stephanie: I know. I know. It's just, it seems like the path we're on is so destructive that it has to fail. It has to fail dramatically. And we have to wake up and realize that we have to do everything very, very differently. The thing that I'm most interested in is the people who are actually walking the walk, talking the talk, growing the food organically. Choosing to buy only organic, which is what my husband and I do. We buy 100% organic pretty much. We go to Whole Foods and we buy the organic choices at Whole Foods.

We have organic soy sauce, we have organic wine, organic beer. I mean this is everything is organic. Other people have to get on board with that. And then, consumer pressure will cause the farmers to choose to grow organic, if nothing else will. If that's what the consumer wants, that's what the farmer will grow.

Toni: But if they're farms are contaminated with GMO ...

Stephanie: Well it takes time to rejuvenate the soil. You can't just suddenly convert to organic when you've got all those chemicals.

Toni: No, but you can suddenly decide to grow conventional seeds and not use pesticide ...

Stephanie: Eventually you'll clear it out and be able to produce healthy food. I just hope we haven't gone so far down this path that there's no return.

Toni: So there could be no return?

Stephanie: Yeah. I mean I don't want to be alive 50 years from now.

Toni: That's a scary thought. Not that you're alive 50 years from now. That's a great thought because you're doing such great work. But, 50 years from now, if we don't stop the trajectory, and I would love to look at the rate if we path out, the regression analysis of autism.

Stephanie: I know.

Toni: [crosstalk 01:43:24]

Stephanie: It's very disturbing.

Toni: It's very disturbing. So the work that you do, you know a lot of researchers have a hypothesis and they set out to prove it or disprove it. They're creating something in the lab and they're creating something from scratch, and they might have an inherent bias in their work, whether it's conscious or unconscious. But your work seems very different. Your research is very different research. It's taking data that exists in nature really, it exists in real life, from drugs, it's real life experience that's there already. You're not making it up. You're not creating it. Can you talk about, is your research very different than from how most other research works, or is this a growing number of people now doing this kind of pooling what's around this epidemiological work?

Stephanie: Well I think a lot of people are using the same techniques that I'm using in other areas that are not biology. I think that increasingly people will be using it in this space. It's a really powerful way, I think, to get at information that is otherwise missed. Because there's just so much of this stuff to read and people just can't absorb it all. But if you can let the computer help you out to figure out those connections and that gives you tremendous hints to then go back and focus on the material and try to understand it better.

So there's a real symbiosis between the researcher and the computer, who are working together to solve the problem of sort of systems level biology. And I think this is something actually that should be tremendously funded. I believe what I'm doing, with regard to the research literature, not just the data that's on the web, which is also of course very valuable, there's a huge research literature out there that people are not taking advantage of. All these little research projects that have revealed little interesting facts about biology. And when you start to pull all of those together and create that large picture and understand it, ask those questions at the systems level in order to understand how that's working. I think you'll get big answers. And I think you get potentially revolution in biology.

Toni: And what I love about it, is the industry talking points for food, and pharma, and vaccines, that if you question the safety you're anti science. What I love about your work is that you're taking high level computer science, it's technology, it is high tech, and you're taking this technology that's science, clearly you believe in science.

Stephanie: Right, I do.

Toni: And you're coming up with these answers. These things that are pointing in directions that show that these other things that we're introducing that happened to be high tech, or moderate tech, supposed solutions that maybe they're actually creating all these basic problems. And you're using a scientific, high tech way of getting to that answer. So clearly, doing the kind of work that you do, you have to have a great grasp of science and technology.

Stephanie: And I think that I'm in a unique position because of my background in both biology and computer science. So I can play both sides of that, both roles in that game. Of being the computer scientist to analyze the data and then being the biologist to interpret it.

Toni: Right. Wow. It's great. Thank you so much for the work that you're doing.

Stephanie: Thank you.

Patrick : Thanks so much for being with us for that episode. And tomorrow is episode 9. And in episode 9 we're going to start out where Toni interviews Zen Honeycutt, who is the founder of Moms Across America. And you won't only meet Zen in that interview, but you'll also meet her family. It's a great interview and she's an inspiring person, another mom who decided to make a difference. And is having a massive impact.

Next you'll get to see my interview with Dr. Pedram Shojai, also known as the Urban Monk. Pedram is a doctor of oriental medicine, and is also the founder of Well.org. And this man is a wealth of knowledge. He's got a certain aura or energy about him that makes you want to really listen to what he has to say. And he comes alive on the screen with information that's going to be very important for you to understand.

And then we close out episode 9 with part 3 of my interview with Dr. Zac Bush. So if you already saw parts 1 and 2 of my interview with Zac Bush you'd understand why it's important to listen to this man. I've grown to love and admire this man because of his stark intelligence, his focus, his passion and his desire to want to right what is wrong in this world and to lead people to higher ground. He's an amazing human being and part 3 of this interview is

something that could change your life. So make sure you stay tuned for that.

As I said earlier, today is day eight of our nine episode docuseries. And time is running out. So I want you to choose either the silver or the gold package. This is vital information that you need to have. I'd love for you to support this mission. Right now during our series it's 50% off. But the package that's right for you. Join this mission, support GMOs revealed. And lets move forward in a very powerful way.