

Speaker 1: [music playing 00:00:05] Bulletproof Radio, a state of high performance.

Dave: Today's guest is a well-known guy. A guy who has started three different companies disrupting Big Food. I realized I had to have him on Bulletproof Radio when I was giving a talk on hacking your brain at South by Southwest and the room was entirely empty. I was like what just happened? There's almost no one in the audience here.

What happened is this guy held an impromptu, we'll call it a sing-a-long and speech with his brother, Elon Musk, on stage at the same time as my talk. Of course, I'm talking about Kimbal Musk who is doing some amazing things that I was unaware of until he gave that talk at [Southby 00:00:51]

Kimbal, welcome to the show.

Kimbal: Thank you for having me. Sorry about that at Southwest Southwest.

Dave: It was hilarious.

Kimbal: It was too hard to turn down. We got offered a space on the stage, but the requirement was they would allow us to sing "My Little Buttercup" which is the song from The Three Amigos, which is the silliest song in the world. People literally lined up 2 a.m. our talk was at noon the next day, and we got the whole audience to sing the song with us out on the main stage at South by Southwest. It was a pique life experience. It was amazing.

I apologize but sometimes we just got to do what we got to do.

Dave: It was well worth it. No apology necessary. I loved it that you and Elon just showed up as just real kind of humorous people like that. One of the things that you talked about at Southwest wasn't going to space and building amazing cars, although, that's clearly what Elon talked about. You talked about your work with disrupting Big Food, your charitable work and making farming something that's distributed as, say, a power generation should be.

Kimbal: Yeah.

Dave: How did you go from being a tech entrepreneur investor in the '90s into being a food guy now? Walk me through your story?

Kimbal: I mean looking back, Steve Jobs has this quote, "when you look back on your life, the dots are connected," but in the moment it was truly one life-changing event after the other.

My brother and I had great success in the '90s building an internet company, first to do maps and door-to-door directions. I watched how technology just massively disrupted the Yellow Pages, which most people, today, don't even know what the Yellow Pages is. It was a multi-billion dollar industry in the '90s that the internet just took away.

It was so powerful to see the impact of technology. When we sold that company, I had the freedom to do what I wanted. I went to New York to learn how to cook, which was not intended as a career. I went in and I said, I love food so much I'm going to go do this for real. I'm going to go do a career-level course at the French Culinary Institute in New York.

While that was a wonderful experience, it was intense and it was like Full Metal Jacket, kind of, screaming at you for six to eight hours a day. Really? Really? Do you need to scream so much? It was an incredible way to learn how to cook.

Just after I graduated, 9/11 happened. Again, I wasn't really thinking about food as a career but one of the most powerful, awful, or wonderful experiences that could ever happen to a human, I was right by ... I lived very close to the Trade Centers. Woke up to the sounds of the planes hitting the building, so that close.

Dave: Wow.

Kimbal: Looked out the window, saw the towers fall, which people who were there can relate but people who weren't, it's literally like seeing the Rocky Mountain Range just collapse. It just breaks reality. It just wasn't a human thing to experience.

The wonderful part about it was because I just graduated from cooking school. My mother is a well-known nutritionist and dietician. Through her, I got to volunteer for the firefighters and I cooked for them. Every day we'd cook real food, cooked that day for nourishing them. They'd go into these giant piles of melting metal, still melting six weeks after the World Trade Centers fell.

They'd come in and we'd feed them with food we'd cooked that day. They'd connect with each other. Converted a gymnasium into a dining hall. They'd go right back out to save American lives. Just watching what real food can do for a community to bring it together, was kind of then I said, I can't not do food.

Tech is neat. It's kind of a way to do something and of course, you introduce tech into everything you do but food is a gift we give each other three times a day. It's such a powerful way to connect with the world and with each other. I saw that in 9/11 and I just never looked back.

That's when I transitioned to food and came out to Colorado, opened the kitchen. Our goal there was really just a world-class neighborhood restaurant. We weren't ... I didn't have a concept of ... frankly, I was avoiding tech more than. I didn't want anything to do with tech. I was like this is about community. This is about ...

Dave: Yeah, you can get tired of tech.

Kimbal: Of course, as things progressed, of course you can't avoid tech and tech has its wonderful applications. What we struggled with in Colorado was back in 2004, we didn't have access to the kind of food you get in New York. We only had access to the

industrial food chain. It was the stuff that you talk about that causes rampant obesity and diabetes, high calorie, low nutrition food, destroys the chemistry of the body, creates tragedy amongst our, especially low-income community.

It's something we've done to ourselves. It's something we could fix. Back in those days, we didn't have a choice. It's just the industrial food system. We started reaching out to local farmers. This is many years before the [inaudible 00:06:04] the table became a term.

We asked the farmers if they'd supply us. There was a skepticism. They weren't very trusting of restaurants. We tried and we worked hard and we built that trust. We have a restaurant called Hedge Row, which is the first farm that we had ever agreed to work with us. We just to celebrate their name, Hedge Rose is our bistro in Denver and Indianapolis.

It was about getting the food to taste good.

Dave: That's hard.

Kimbal: Trusting the food. Industrial food is not about it tasting good. It's about shipping it for thousands of miles. It's mostly fried so ... you can fry cardboard and make it taste good. It really is, for us, real food at the time was about just getting it for that you trust and for it to taste good.

When we started working with the farmers, we really hit a nerve. We were one of the creditors. Sort of the founders of [inaudible 00:07:03] table, whatever that's called. Whatever the term is. We saw success because it just tasted so much better.

Dave: Speaking of starting restaurants, we're actually doing this interview at Next Door, which is your restaurant down on Pearl Street in Boulder, which is why people might be hearing dishes in the background and all. It's an amazing thing and I checked out the menu. It's all real food, as you'd expect. It's very affordably priced.

Something that you talked about is you'd like to have a thousand of these around the world in order to make food that's good for you, that tastes good and is affordable because not everyone can drop \$50 on a meal.

Kimbal: Right.

Dave: In fact, no one should have to do that to get real food.

Kimbal: Right.

Dave: How are you going to get this concept into a thousand locations? That is mega scale.

Kimbal: That sort of leads me to a life-changing event for me. The Kitchen was, is today, well-respected, very successful restaurant but it wasn't quite moving the needle for me. It

was we need The Kitchen because what it does is it helps build the locals farm supply chain. It works with farmers in a very flexible way, but the price point is simply too high. It is a \$50 average ticket per person.

I was really frustrated with this. In 2010, while I was truckling with this challenge, it was like an existential challenge. I'm here to just make food for wealthy people? I feel like I have a greater purpose in life.

I went down a ski hill in 2010 [Jackson 00:08:39] hole on an inner tube and the tube flipped. I landed on my head going 35 miles an hour. Broke my neck at C6 and C7, ruptured the spine. Paralyzed on my left for three days.

It's hard to describe paralysis. It's like a non-feeling. There's no pain.

Dave: Right. There's just nothing there.

Kimbal: It's just nothing. The doctors were telling me, we can fix this. This break is a particular kind of break. Very lucky that with surgery they can remove the paralysis. I'm like listening to them, nodding my head, this is the only thing that moves. Tears are just streaming down the side of my face.

I mean it's an inconceivable thing to describe. I just kind of told myself because the doctors kept giving me courage, we can fix this. Just give us a few days. Get the surgeons in from around the country to fly in for this surgery.

I went into surgery on a Tuesday night and I just told myself, if they do fix me, I'm going to work on bringing real food to everyone. Whatever that meant. I didn't have a definition of what it would mean.

I woke up the next morning and the surgery was successful. It was quite anti-climactic. While it was successful, I had to be horizontal for two months.

Dave: Oh, god.

Kimbal: They didn't tell me that when I was going into surgery. For that two-month period, I sat with my wife at the time, Jen, to design a school gardens that would scale and reach many, many schools. We were doing school gardens on a small scale before but they didn't scale very well.

Then I started to work with Hugo, my co founder at the restaurants on Next Door, which was to take the same principles of the kitchen and make the price \$15 instead of \$50, which is really a Chile's and Applebee's price point. What would it take for us to deliver food at that price? Could we do it? Could we get farmers to sign up for it?

We, literally, while I'm in the hospital, you can imagine with my mind, it spins a lot normally, but if I'm like locked in a horizontal position it spins like 30,000 miles an hour. I came out of the hospital and said, I think we could do this.

We got some farmers to support us. Next Door is same principles of The Kitchen, work with local farmers, real food that we trust. Real food that we trust and nourish our body. Real food that we trust to nourish the farmer. Real food that we trust to nourish the planet and to do it at prices that normal Americans can afford.

Our goal is to replace all of the Chile's and Applebee's in the country.

Dave: Now, the people, I think Hedge Fund who probably own Chile's and Applebee's, at this point, are probably not so happy about that. There is a big food industry that's just well entrenched, like the processes, the ways we've been doing things, the ways we think about food, how cheap can we make it? We can make it taste good enough and hopefully be a little addictive so you'll come back really often.

Kimbal: Right.

Dave: How are you going to break that?

Kimbal: Well, I've watched industry after industry be disrupted. I happened to have, you and I have both lived in a very interesting time, the information revolution has disrupted one industry after the other. There's no doubt in my mind food is the current one and is being disrupted as we speak, but the consistent thing is that the existing players just never figure it out.

Even the Tesla with electric cars, GM it still hasn't figured it out.

Dave: How could they miss that?

Kimbal: I mean how could they miss that? They're working on pickups. Pickup trucks because that's, in their mind, the future and you're like, wow. It's just never really a case of the existing players and how they feel because that really doesn't matter. What matters is creating a product that meets the customer and the guest where they need it. Creating real food that truly nourishes the guests that they connect with at a price that they can afford? That's what matters. That has been a great success for us.

Dave: There's two things you talked about there. One is supporting farmers, the other one was like nourishing the planet with the food that we eat. How do you see the system of food? How does that work in your mind? Explain to me.

Kimbal: Yeah. I mean we work hard on this. This idea of real food is food you trust to nourish your body, which I think you talk very well about. I think you've really helped move millions of people to really understand how important it is that food really nourishes your body.

We take it another level to say, actually, you also need to think about the farmer. If you can include the farmer and you're thinking, well you trust this to support and nourish the farmer, you're resort of building an ecosystem, which thrives and brings more nourishing food to you.

The final one, is we have to understand how this impacts the planet. We, for example, didn't do burgers for a long time at Next Door. People wanted burgers. They loved burgers. We couldn't find a way to do it that resonated with our values.

Eventually, a rancher came to us and said he's willing to sell us the whole cow and we would be able to control and work with the rancher on what the animal would be fed from birth until they're served in our restaurant. Every single thing they eat and everything they do, the manure would go and be a carbon sink in the soil.

We kind of said, hey, I think we can do this. The prime customer will go to The Kitchen or Hedge Row. The burgers can now go to Next Door. We found a way to serve burgers that is truly real food that we totally trust to nourish the body, to nourish the farmer and to nourish the planet.

We are so proud of that work. It has been such an impact and it shows all the restaurants that it's possible.

Dave: About 90% of small farmers have day jobs because they can't make ends meet. I've studied this. I live on a 32-acre small farm. We permaculture. We have four sheep and two pigs.

Kimbal: Where is the farm?

Dave: Outside of Victoria B.C.

Kimbal: Cool. Awesome.

Dave: I've wanted to grow my own food. I wanted my kids to experience that. It's a lot of work.

Kimbal: Are you Canadian?

Dave: I'm a permanent resident but I'm American.

Kimbal: Cool. I have a Canadian passport so that's how, I came to Canada in '91 to study there.

Dave: Oh, do you?

Kimbal: I love Canada. Then I moved down to California and became a citizen of America in 2004.

Dave: Congratulations. I'm still working on getting my Canadian passport. I'm hoping it'll happen in the next year.

Kimbal: It's a wonderful country. I love Canada.

Dave: I've been there for eight years. Really, really appreciate it.

Kimbal: Yeah. Well, some of my best friends come from Victoria, so -

Dave: Really?

Kimbal: It's a gem of a place.

Dave: Well, come and visit. It's got an amazing farming ecosystem there and not a lot of glyphosate sprayed and very clean air and water. I mean it's kind of hard to live up there and run a big company but I do it because well, when I'm home I can recharge and I know what I'm eating. I know everything about how the plants grew. I know what the animals ate.

Kimbal: Colorado is building a similar kind of emphasis.

Dave: Yes.

Kimbal: We've watched it happen back in 2004, we had a thriving farmer's market and it was pretty good. It's easily 10 to 20 times the size it was back in 2004. That's because consumers are really appreciating how much better it tastes to get the food from local farmers, how much more they trust it and the local farmers are also working with a lot more restaurants and it's become Farms and Tables is now a thing. It's amazing.

Dave: It pays farmers a living wage, which is like farmers and teachers kind of get screwed. They both do the hardest work and get paid the least, right?

Kimbal: I think that was and certainly is the case in industrial farming. If you are a 100-acre farmer in Iowa, farming the industrial product of corn or soybeans, most of which goes to ethanol or high fructose corn syrup, just terrible, horrible sources of our beautiful land. You still only earn, I think the average income is \$22,000.

Dave: Yeah.

Kimbal: I mean it is so terrible, but if you are a local farmer closer to let's say like Denver, and you have a 30-acre farm, you could actually have a total revenue line of maybe half a million dollars. You live on the farm, it's pretty good life. You might have income for the family in the hundred to hundred fifty thousand dollars range.

That's actually a really good life and you're a real part of the ecosystem.

Dave: Yeah. You can see what happens when animals poop on soil.

Kimbal: Yes.

Dave: You regenerate.

Kimbal: Coming back to the planet now, it regenerates the soil, exactly.

Dave: What we're talking about there is a move from centralized to decentralized, which happened in computing where we both sort of cut our teeth. We have this empty centralized cloud. There's still some centralization but there's more compute power on our iPhones that we used on servers a while ago.

Kimbal: Right.

Dave: We're talking about doing that with power. Putting a battery in your house. Doing solar in your house where all of a sudden we're not generating these massive plants. Now we're doing it with food. One of the things that I'm targeting is that we can have healthy soil and we can have food that doesn't have to cross the globe for us to eat it, which reduces fuel consumption.

Everybody wins on this, except the Big Food conglomerates who want the high fructose syrup and fried in Canola oil, or whatever.

Kimbal: Well, the big lie about, and one of my infuriating pet peeves of the Mon Santos of the world, they hide behind this mantra that they're feeding the world. The truth is they're not at all. GMOs have not succeeded in doing that.

Worse than that, 40% of the farmland that grows corn, 40%, which is 25 million acres, that's twice the size of California's Central Valley, farms ethanol. We don't actually know what to do with our land because we don't have any other use for it. We should be growing real food on it. What we're doing with these folks is these farmers, these poor farmers are stocked in this industrial food system. They don't know what else to farm. They don't understand real food.

It's the saddest thing. In the most angry and bitter farmers out there are the ones that are farming this industrial food system. From the planet perspective, ethanol is neutral at best. It takes a gallon of oil to produce a gallon of ethanol.

Dave: It's the worst decision ever.

Kimbal: It's the worst decision ever and it's a monstrous subsidy to the industrial food system to keep it alive. When we come to our senses around ethanol, which will either happen through government realizing that's a stupid idea, even the oil companies hate it. I mean if the oil companies hate it, you know it's a bad idea. It's just incredible.

Where we're headed, either like the cars will take over. Eventually, the corn will take over. We won't need ethanol. There are other ways to come to our senses. We're going to have a lot of farm land to farm real good. I get really excited about that.

Dave: One of the problems that I'm concerned about when I put on my future hat is that we're spraying a lot of stuff on the soil in these farms that destroys the soil. There's a complex web of mushroom family, of fungi. There's bacteria. When you spray chemicals on that, you disrupt that. You end up with this sort of substance that holds up plants.

Kimbal: Dead soil.

Dave: There's no life in it.

Kimbal: Yeah.

Dave: Are you working or are you aware have you seen technology to help restore the soil? Like you said, there's going to be 25 million acres where there's no animals at all right now. We talk about animal cruelty and all that, well there's just no butterflies. There's no mice. There's no turtles. There's no salamanders. There's nothing. It's just sterile.

Kimbal: Yeah.

Dave: We're going to have to bring that back.

Kimbal: Yeah, I mean I'm working on a farm in Memphis. I'm in partnership with the city of Memphis. We're taking an over 200-acre piece of land that used to be a chemical cotton farm, right in the middle of Memphis. It's amazing that this existed. It's bizarre that we allowed this to happen.

City came to its sense, we shouldn't be doing this. We've been now, in our third year of putting nutrients back into the soil, which is growing cover crops. Unfortunately, even three years in it's okay. It's going to take 20 years to have that soil be thriving again. We're on our way.

I think the challenge, of course, is going to be how do we kick start it? How do we accelerate it? How do we figure that out? I continue to noodle on that to say, "If we can figure out what to do with that land that's currently forming ethanol for corn at a loss, people are losing money, it's just such a waste of our beautiful land, I know at some point either I'll do it or someone will figure it out because it's just an opportunity waiting to be solved.

It's a very exciting one. It's unfortunate how much damage we've done to our soil. It is fixable. We just need to go figure out how to do that.

Dave: One of the first steps is get this decentralized food production back online.

Kimbal: Yeah, totally.

Dave: Part of the discussion there involves animals. There are a group of people who say you should never eat an animal. I was actually a raw vegan for quite a while. It did bad things to my health. Really bad things.

Kimbal: Really?

Dave: I've heard that story over and over. I was a very well-educated, mixing the right foods and all. I look at eating industrial meat as something that I don't do. I wouldn't ever

serve it at the Bulletproof Coffee Shop. I wouldn't ... right? I don't put it in my kids and I don't put it in my body. I'll eat a vegan meal before I'll eat that because it's not food.

Kimbal: Exactly.

Dave: On the flip side, though, I mean you're serving meat. I recommend only grass-fed animals, hopefully from someone you know.

Kimbal: Yep.

Dave: What's your take on the environmental pros and cons of eating meat?

Kimbal: Yeah, I think you and I probably have a similar attitude or philosophy, which is industrial meat is so bad. It's bad for you. It doesn't taste that good. It's meant to be shipped and just growth hormones just to do awful things to our animals just to food are small. They literally can't even stand up. It's an awful, awful thing that we do to create pro-quality product that is high calorie, not healthy for people.

For us, the way we look at meat is to think more along the lines of trusting where the food comes from, trusting where the meat comes from, knowing where your farmer comes from.

We have a proprietary approach to feeding our animals. Mostly grass-feed but we do a few other things that we believe is actually healthier and tastier. That's how we do it and we have total control of that. It comes back to trusting.

What that really means at the end of the day is you're going to ... I think a good diet is going to mean less and better quality meat. Think about enjoying meats that are raised well that you trust that came from a decent farm system where the farmer is local, where you understand what it was fed. That would probably mean you're paying a little bit more, not too much more, but a little bit more. You're going to trust it and it's going to taste better.

I think we'll all be better off if we have a diet that includes meat, but not at the quantities that we've done in the past.

Dave: I recommend like two to four ounces of rough meat.

Kimbal: That's about right.

Dave: You don't need the 16 oz steak. If you eat a lot of meat, it actually shortens your life span because you're getting too many of the inflammatory amino acids. They're essential in small doses.

Would you spend twice as much on high-quality meat and eat half as much as it and fill in the rest of the calories with vegetables?

Kimbal: Right.

Dave: The answer is most people probably would if they could buy vegetables.

Kimbal: If they could ... we next door our top seller is a roasted veggie bowl. Now that is a bizarre thing to have as a top seller. There's no way any other restaurant concept in the world's top seller is a roasted veggie bowl.

Dave: You know, in Santa Monica, our coffee shop that's our top seller too, but that's grass-fed steak on top of it.

Kimbal: Exactly. What we do, though, is what we say. Is two to three ounces of protein, meat protein. My favorite is curry chicken goes on top of it and it's just flavors come together. You can, we don't actually offer beef with it but people could ask that.

The reason why it's so popular is because it's exactly the solution that we just described. It's a wonderfully satisfying meal of vegetables you know where they came from, they're organic, they're delicious. Then you put a few ounces of protein on it. It really is that perfect rounded meal.

Dave: One of the things that frustrate me, I travel sometimes 150 days of the year, so I have control of my food when I'm at home, but when I'm on the road, sometimes I'm like I think I'll fast. There's just nothing I want to eat here.

Kimbal: I have to save ... I literally I've been hearing where there's just McDonald's. There's a few others. I think I'm going to starve.

Dave: It's okay to not eat for a day, right?

Kimbal: Exactly. Exactly.

Dave: Even if I go to a hotel, though. I say I want a plate of vegetables, it's like an order of asparagus, just three stalks of asparagus. It's like I want 17 orders of asparagus. It's \$200. I've never actually spent that much money on asparagus, but just literally, they just won't make a vegetable bowl at any price.

Kimbal: It's such an unusual request they wouldn't even know where to start.

Dave: Yeah, but you're doing it in your restaurant and you're finding that people actually want to buy that.

Kimbal: They love it. You do have to create that satisfying rounded meal.

Dave: Yeah.

Kimbal: If what we did at Next Door was a preachy, unsatisfying vegetable bowl with a little bit of meat on it because we're reluctantly doing that, it just wouldn't succeed. I think it's

really about understanding. You have to meet the guests where they are, which is they do want food they trust. They do want food that nourishes them. They do want food that nourishes the farm and the planet.

It's got to be affordable and it's got to taste good.

Dave: Also, when you're done eating it, you shouldn't still be hungry.

Kimbal: Right. Hunger satisfaction.

Dave: Right. Yeah a lot of times you see these fluffy or raw [calables 00:27:00] or something. You eat that and like I feel like I didn't eat. Can I have a lot more?

Kimbal: Yeah, except are we going to have lunch yet or dinner yet?

Dave: There's a feeling. I like to call it a food high. You don't have to make food that does that at a crazy low price point, which I really admire.

Kimbal: Yeah, our price point is, on average, \$10 for an entrée and with a beer, with a wine, our average ticket is \$15 per person. We are very proud of that. That is extremely affordable. It matches ... maybe it's a little high, maybe a dollar more than a Chili's or an Applebee's but we actually use a lot of automation to actually take food in from the local farmer and cook it consistently.

If your natural food system, you're at Chili's you're getting a chicken sandwich, that piece of chicken was grilled a thousand miles away. They'll laser it to grill more so it'll look like it was grilled, but it's like it's literally cooked a thousand miles away and the skill of the chef is a person cut it out of a bag, put it in the microwave, put it onto a plate. That's not even an exaggeration, that's exactly what they do.

At Next Door, we have no freezers. The food comes in fresh every day. How do you do that? Because our [inaudible 00:28:13] are wonderful there. Our chefs are wonderful but they're young, 18, 22 year olds. They don't have 20 years of skills to learn how to cook this stuff.

Automation enables us to help them, empower them, an 18 year old to cook like a 2-star Michelin chef within a few hours.

Dave: That's what's disruptive about what you're doing. It's that your assumptions are different than what Big Food created. Big Food just said, look how cheap is it? Does it look pretty enough and does it taste good enough? That's really the only algorithm.

Kimbal: They'll go down to the what is the least good it has to look? What is the least tasty it has to be? What is the least nutrition it has to be because everything about it for them is price. There is no regard for anything else.

Dave: You're betting, essentially that people are going to spend \$1 more to get a meal that's trusted and nourishing and makes them feel good.

Kimbal: Yeah.

Dave: I'll tell you lots of people will spend \$5 more, \$10 more and I'm lucky, especially in that I travel, I will spend all of my travel budget on quality food because I do not know how to perform.

Kimbal: We've actually done studies at Next Door on our guests and consistently people are kind of, this is going to sound a bit weird, "This should cost more." Because it comes back to trust. They're used to going to Whole Foods, where it's quite expensive. They go to other restaurants and it's quite expensive. Then they come to Next Door and it's one-third the price. They're like, the feedback we get is they kind of want it to cost more. Our answer to that is actually, for you guys, you're in Boulder, you're in downtown Santa Monica, sure, you can afford more, but that's not the goal.

The goal is to be in 2,000 restaurants across America so our price point has to be accessible to middle America. It has to get people excited to eat it. We work super hard to get that price point more affordable than it needs to be but long term we believe it is the right price. If we can keep doing it and the farmers are willing to continue to grow with us and support us, it's going to be great.

I mean how wonderful would it be? I just can't imagine how wonderful I'm going to feel when I'm visiting those farmers in Iowa and I get to eat it next door, instead of being forced to starve til I get home.

Dave: That vision of being able to go to any city in the country and to find a meal that you actually want to eat.

Kimbal: That you trust, that's delicious. Oh my god. That's gives me goosebumps.

Dave: It's disruptive and it's what the world needs right now because the side effect of this kind of thing is every disease of aging will decline. Diabetes, Alzheimer's, heart disease, cancer, all of those, just magically the incidents of them will go down.

Kimbal: Right.

Dave: If people aren't spending more to do it, because you've thought about the system, because you've added automation, because of things like that, the only loser here is big industry.

Kimbal: The only loser is ...we bypass the system entirely. It's amazing. We have a restaurant in downtown Denver and it's at a train station. It's in an amazing, awesome location, but it's quite an awkward thing to get deliveries and to get trash picked up.

We have relationships with our farmers where they pick up all of our compost and they deliver their food directly to us. We get a call from the landlord saying, there's something wrong with your system, where are you guys hiding your trash?

We're like, well, we don't have trash because all of our wines are kegged so there's no bottles. All of our food is composted, any food waste is composted so there's no waste. We have this tiny little box we do once a week with serving 3 or 4,000 people that is our trolley of based plastics that is literally all of our trash. We have no CISC truck pulling up behind our restaurant to deliver.

The landlord is we're pulling something. We're pulling his leg. His team have to go deal with this with every other restaurant except for us. We bypass the industrial food system entirely, including waste.

Dave: That's a beautiful thing. You've also taken some of your success and you've started doing nonprofit work with low-income schools around helping kids understand where food comes from. Tell me what you're doing there.

Kimbal: Yeah so that's Big Green. It's our nonprofit. We started out, before my accident, we were doing two school gardens a year. It was a philanthropic effort. Mostly it was an employee of the kitchen that was doing it. It was wonderful to do but it was one of those things where you don't invest enough in the beginning and then it just cost more and more every year to kind of keep going.

I actually ran the math when I was in the hospital. I was around the math of if we were to do two gardens a year until I died, we wouldn't finish Boulder County until I was like 100, 100 years old.

I said, well, we've got to fix that. We've got to figure out a way to reach more people, more kids with greater impact and faster. We designed the Learning Garden, which is a more, which is a scalable version of the School Garden. School Gardens are amazing. They improve test scores. They improve kids' connections to food. It changes what they eat, but they're hard to teach it. They're usually in the corner of the school yard. They're usually fall apart because they're hard to maintain.

We said, well let's make it beautiful. Let's build it out of modern day playground equipment materials, which means it'll last longer than the bricks in the wall of the school. Let's raise it up. Let's take the fence away. Let's make this real easy to teach and make the kids enjoy it, enable the kids to enjoy it during recess so they experience much more than just through their lessons.

Instead of teaching kids about food, we train teachers to teach science through the growing of food. Our kids get 90 minutes a week in the Learning Garden because they're learning science and math and history and English.

It has been so amazing. We did our first one in 2011 as a prototype and again, we've done two a year until then. In 2012, we did 50. Now we do between 100 and 150 a year.

Dave: These are new gardens at schools.

Kimbal: These are 2,300 outdoor classrooms that are large infrastructure for these schools. Beautiful, permanent additions to the school yard. We're in seven cities. We do 100 schools at a time.

Chicago, Denver, LA, Memphis, Indianapolis, Pittsburgh and we just announced Detroit.

Dave: The kids actually participate in growing the food?

Kimbal: They grow the food and they eat it. I was just at a Salad Harvest Day yesterday and this particular school just had the most bountiful harvest. These kids were just trying to figure out what they were going to do.

One class made a kale hummus with the kale from the garden. Another one made salads. There was baby kales. They were just eating that raw, which was amazing.

Dave: Wow. For a child who grows up thinking that Cheetos are food.

Kimbal: Seriously. The industrial food system has really penetrated our school systems in awful ways where they'll give Cheetos for free to the teacher and they'll use it as the teachers will use it as incentives. So sad.

We have one teacher that now grows strawberries in the Learning Garden and they use strawberries as the incentives.

Dave: Wow.

Kimbal: Strawberries, it's not super bountiful so if you have a little area, a little bed of strawberries, you might have I don't know, 30 to 50 strawberries. Picking them when they're ripe, when they're delicious that's something the teacher can now use as incentive. Oh my god, it's the most wonderful thing and these kids get so excited and they get so protective of their strawberries. It's so wonderful.

Dave: That just that's a life-changing experience for children.

Kimbal: It's wonderful.

Dave: There's something else, though, around decentralization. These aren't growing enough food to feed all the kids every day, but it's part of the experience of food.

You've done some work around taking shipping containers and turning them into high productivity farms because they're a place where there isn't enough sun, there isn't enough soil. There isn't enough water, but we still want food and we don't want food shipped around the planet.

Kimbal: Right.

Dave: What are you doing in that space?

Kimbal: I've been working with farmers and I continue to work with soil-based farmers, primarily. They're wonderful folks. They're not young. They're pretty old. I continue to encourage young people to get into farming and work with a number of the National Young Farmers Coalition, phenomenal group.

The problem is that I've found is that all of our young folk live in the city.

Dave: Right.

Kimbal: They want to live in the city. Now, we're urbanizing at a rapid pace. Trying to sell someone on the go to the farmland of Iowa is a tough sell.

Dave: There's not a lot of dating and parties.

Kimbal: No. It is a tough sell. You're a millennial they're like cool, I'm going to go to Cedar Rapids. I don't think so.

I think over time maybe those things will find a way to attract folks. The reality is though, folks are in the city. I've found this ... we've been watching urban farming tech for a long time, and to be quite honest, up until about five years ago, it really was an industrial food product.

It didn't taste good. It wasn't really grown to be nutritious. It wasn't grown to taste good. In fact, there's the famous, or infamous thing called the Holland tomato. Holland tomato is most of the indoor farming tech over the years comes out of Holland, is a tomato that is designed, it looks red. It is round, but if you eat it, it just tastes like water. It's heavy. People buy tomatoes by the pound, so it kind of matches the industrial food systems ethos of let's get something to the consumer that looks like a tomato, weighs a lot so we can charge more for it, looks round and red. It shelves stable so we can ship it for thousands of miles. Fruit that doesn't taste good. It essentially has no nutrition to it. That really is the history of urban farming.

About five years ago, I'm close to this, I started watching tech around lighting come around where the food can now be grown to taste better. The food can be grown to not just be nutritious, you can design the nutrition. You can say, I want more vitamin C in this strawberry. I want more vitamin D in this strawberry.

That's amazing. I went to this tech lab in Holland a few years ago, where they actually had strawberries lined up. This strawberry is meant to be, this strawberry is meant to be a small size with a sweet taste, a bit more for jams. This strawberry is a larger size with a tart taste, meant more for desserts and tarts. This one has more vitamin C in it. This has more vitamin D in it. Just blew my mind that you could now do this, as a chef, to design your food.

Square Root is our company in New York where we have shipping containers converted into indoor farms. Each farm contains, can grow the equivalent of about two acres of outdoor projects. It's a 320 square feet container.

Dave: What does it cost to buy a shipping container and get it out in order to do this?

Kimbal: Well, these are used shipping containers, so they're not very expensive. The cost is actually not that much. Right now what we're doing is building the tech platform that makes it relatively easy for a young farmer to learn how to farm quickly. Our program brings young farmers in for a year at a time, although, now our farmers are asking to be longer than that. So far it's been a year at a time.

We have ten farms in Brooklyn. We did a call for applications. The first year we got 500 applications for those ten farms, which tells me that the future of farming in America is very bright. Young people want to farm, they just don't want to move to Iowa. They love the idea of working with food.

Then the second year we had 1100 applications.

Dave: Wow.

Kimbal: It's so wonderful to see these young folks coming in and being able to be connect with food, be part of their community, grow food for their community, and do it in the city where they live.

Dave: And be entrepreneurial about it too.

Kimbal: Be entrepreneurial. Our program is actually an entrepreneurial program where they get literally a business in a box. It's shipping container that grows food. They have to figure out what they should grow where.

Our first year, we give them a lot of guidance. We're like this is you're going to grow this for a little while. As they get closer to their second year they have a little bit more understanding of what they perceive as an entrepreneur, they can go figure out what they might want to grow and sell. By their third year they can have multiple shipping containers.

The other really powerful thing about what we're doing is they don't even have to continue with us. If they want to, the USDA is a partner with us. The Department of Agriculture will give them a \$350,000 loan to start their own farm.

Dave: Wow. You can buy a lot of shipping containers and LED lights for that.

Kimbal: Yeah. I mean indoor farming you can do something very big. Some of these folks actually want the loan to go do their own farm. They do end up wanting to go back to their roots in Indiana or Iowa. It's quite nice to see that. I don't see it at much scale, I mean it's at the scale in people want to be in the city, but over time I think it's going to be a pretty

cool thing to have your family on your farm, live nearby the city that you love and be part of that community and grow food either indoor or in soil that really nourishes your community.

Dave: I would do ten of those right now on my small farm because I live in Canada. It's dark half the year.

Kimbal: Oh my god, it'd be perfect for you.

Dave: All of winter I could have that stuff. I could feed the local community. We have a little farm stand now. It's very small. That's the sort of thing I do but I honestly don't have enough time and expertise to become proficient at running those things.

Kimbal: You'd get and Victoria close enough to Vancouver where you'd get enough young people that would want to do that.

Dave: Yeah.

Kimbal: That would be great. Vancouver especially would be a wonderful city for us to do a Square Roots campus.

Dave: Well, I think I know a lot of people up there would be interested so we can chat about that. I do think there's enormous just a whole basically top third and bottom third of the planet where there's not enough sun half the year. Shipping containers can feed a lot of people in a way that's organic. You don't have bugs. It's a transformative technology in and of itself.

Kimbal: Well, what's wonderful about Square Roots is it really compliments the local food system. The soil-based farmers are generally sold out. It's because of the Farm to Table movement, because of the desire for local food, if you're a soil-based farmer in the New York area, you are sold out.

What we do at Square Roots is we complement that and add supply and local supply. We're really taking the business away from shipping in food from Australia or Mexico where it may be organic down there but this is ridiculous that we ship food thousands and thousands of miles. I mean sometimes even lettuces. It's just so bizarre that we do that.

Square Roots has really been this powerful complement to the local food system that's already there.

Dave: I see a really bright future for what food is going to look like over the next 10, 20 years. It has to be decentralized. It has to be local ...

Kimbal: It can be with automation and with urban farming tech, it can be decentralized. It's better if it's decentralized. It's tastier. You don't have to transport it. You support your local farmer, local business people.

This globalization that we've created over the years has its benefits but one of them is not tasty food. It is not nutritious food. It's terrible. Food is not meant to travel like that. Food is supposed to be connected and you're supposed to trust it and Square Roots is doing that, Next Door, other restaurants that connect with local farmers are doing that. It's wonderful to see the change that's happening.

Dave: Kimbal, you've had a really interesting life. I mean you've survived being paralyzed. You've had a career as a tech entrepreneur. You've had the ability to see and do lots of things. You've had that rare opportunity to sit down and say, what do I really want to do now? Because I can do whatever I want to do.

Just based on your life's learning, everything you've seen and done, if someone came to you tomorrow and said, "Kimbal, I want to perform better at everything I do as a human being, what are your three most important pieces of advice," what would you offer?

Kimbal: Well, I think this is going to obviously be obvious. Three colorful meals a day. What I mean by color is most Americans will eat brown food, beige food, meat and potatoes. Things like that. There's nothing wrong with that. Add color to your plate. You'll just have a spring in your step. Your blood sugar levels will be in a healthier place. You'll get the nutrition your body needs. That's number one.

I find being outdoors, to me, is changes my life. I live in Boulder, it's one of the most beautiful outdoor environments. Get out. Get outside. Get out of the office. Get out of your home. Just be outdoors. Even if you're in New York City, just go to Central Park. Do whatever. Be outdoors more.

I think technology for all of its benefits has sometimes drawn us into a cave and we're not really meant for that.

Then the final one, this is something that I've learned from when I was 12 years old is eat with your friends, eat with your family. Don't eat alone. It's different to nutrition. It's different to what you should eat. Eat with your friends, eat with your family and connect with each other. You'll just have the most wonderful life because those relationships that you can build when you eat with each other, I think, make life worth living.

Dave: Thanks for all the work that you're doing in the world and thanks for continuing to do new and innovative and disruptive things even though you don't have to, and thanks for being on the show.

Kimbal: Thank you so much for having me.

Dave: If you liked today's episode, you know what to do. Go support Big Green, which is Kimbal's nonprofit. It is something that's making a huge difference in the world. We don't always see it when we sit down at home to eat or at a restaurant, but the whole system of food is in the middle of changing right now and Kimbal's one of the guys making this happen.

I'm really appreciative for his work and just for every time you sit down and choose food that was grown locally and food that's going to make you feel better and food that actually made the soil healthier, made the planet healthier and provided employment for the people around you. That's just the right way to live. Thanks for listening.

Kimbal: Thank you.