Danny Lennon: Kyra, thank you so much for joining me on the podcast today. How are you doing?

Kyra Bobinet: I am doing excellent Danny. Thank you so much for having me.

Danny Lennon: It's my absolute pleasure and we have a lot of stuff to talk through. I definitely have a lot of areas that I am interested to pick you over in on. Before we get any of that good stuff how about you give people a rundown a bit about the overview of your background some of the work not only you are currently doing but the kind of journey that brought you there through both academia, and then obviously some of your more recent work too.

Kyra Bobinet: Sure. The most recent announcement was that we have a do- developed software for habit formation with and by Wal-Mart in the U.S. and that we did a national rollout last weekend, and so I am very excited but also very tired coming off of that big sprint to get everything going and of course everything that goes wrong does go wrong, but you get through it and you build a lot of resilience. It's focused on eating and healthy eating habits, so I am fully loaded into this conversation around what does and doesn't work. It's all kind of forward in the mind right now.

Danny Lennon: That sounds like an amazing project in and of itself, and so even before that what have been some of the areas within academia that you've been involved and that have kind of shaped your path

to being or at least starting you on that journey of being interested in this area that you are?

Kyra Bobinet: Yeah. There is a keynote speech for graduation I think years ago before Steve Jobs died and he talked about how the thread of your life is always more clear looking backwards than forwards, and so I would say that the thread that has carried me through decades of my career development and my passions is all about behavior change, and as it relates to health because I'm a doctor and a public health physician I really see it through that lens. But just every aspect of behavior for our entire lives is what I am all about, and so academically I've done everything from cancer research to prison recidivism research to metabolic syndrome and mindfulness research studies. It's kind of again a really weird mix of academic experiences, but if you look at it through the lens of behavior change it all kind of ties together.

Danny Lennon: Yeah. It's interesting. I often kind of tend to think that when there is more of that diverse view of different areas that some of – it really opens us up to understanding more than if we had stuck to one specific field. And I think there is a lot to be said for why people working across multi-disciplines in various institutions often confined these new viewpoints when thought of if they had stuck to one specific silo.

Kyra Bobinet: Me too.

Danny Lennon: So, I guess that personally by doing all this different stuff, right?

Kyra Bobinet: I totally you know – now who is ever said that exactly that way, but I'm completely in that camp or maybe if just to self validate what my own path has been. But I do think the most interesting people are people who have multiple domains and dip in and out of different life's things that you would never put together otherwise, and it makes their perspective that much more valuable.

Danny Lennon: Of the back of that that actually kind of brings me to one of the things I was intrigued to ask you about after looking through quite a lot of your work. You mentioned that obviously behavior change is this big area, and I think for everyone listening to this particular podcast it's been quite a hot topic specifically for not only making changes with our own health, but many of the people listening who coach people or who are physicians or dieticians working

with people. So, this area of behavior change is something that everyone is talking about and that is being discussed a lot. However, I think what was quite unique when I saw your approach is that you've combined it with the second element that probably isn't I've already talked about that you termed I think Design Thinking and you brought this into the conversation. Can you maybe just explain what exactly you mean by Design Thinking and how that relates to this conversation around behavior change?

Kyra Bobinet: Sure absolutely. So, I like most things that we get to we get there through failure or what we perceive as a little bit of failure. So, I was running a study I was at now as a medical director of Health, Wellness, Innovation running a study with Duke University on metabolic medicine or metabolic syndrome which is when people are pre-heart attack, pre-diabetes and there was a woman that was in my study I did I did an interview with who completely changed my life. We were discussing how she was getting so much out of her program, her intervention and she was losing weight, and she was learning how to eat better and all these things, and I was just shaky inside I was like "Yes, yes this is what I want," and then she pauses and she says, "But I know what I should do and eat. I don't know why I don't do it." And in that moment my feelings of success plummeted and it created this interest and this curiosity of, "I've got to figure this out." And so, that was just kind of burning in my brain and caused me to go deep on neuroscience.

I'd already been neuroscience hobbyist of sorts, but I went deep into that. I said, "Why is that? What is that between what we know we should do and what we actually do that we all share as humans?" And that led me to working at Stanford with BJ Fogg who is behavior design expert and has been with us in lab and in that world there is this kind of you know design thinking is a huge thing started at Stanford for the most part and IDEO does it and it was originally used to create better product for you. So, they would go into somebody's home and do a little ethnography you know temporary ethnography, figure out – you maybe an elderly woman and you can't open a can with your hands and you can't turn the crank on the can opener or it doesn't work for you somehow, so they figure out what's a better design of the tool that would work for you.

And so take that over to behavior change and BJ was using it as a way of coming close to what people need, and also what they actually would do. And so it got me closer to solving this what I now call the Brain Behavior Gap, which is this I know what I should do I don't know why I don't do it, and being able to understand that design thinking is a way of solving the problem using experimental design which is very familiar to me as an academic, and then coming up with solutions that are collaborative and very close to what the user or your target audience is doing and wanting. And even with his perspective looking at more kind of the psychological aspect of it, and then I took it further when I started my own firm I added to that these sort of neuro-anatomy and what the brain is doing here, you know, why is the brain doing this? So, even beyond the parameters of psychology I found it helpful to think about brain function and areas of your brain that are in charge of different things that you do that help explain all this weird behavior or irrational behavior that we see on the surface.

Danny Lennon: There are definitely a few things I want to pull back on it and get into. One that struck me as you were talking about this Design Thinking was that it's kind of reframing things in a way that saying if something is not being successfully done there is just something along the process to get there that's faulty, and there is just maybe one thing or two things that need to be changed and we can go back to them to get a certain process to work. Would that be kind of fair summary of one of those ideas?

Kyra Bobinet: You are exactly right, and then to extend that further the thing that separates design thinking from brainstorming or goal setting or some of these other sort of tools in behavior change people's worlds is that you iterate. The beauty of design thinking really I think and the power of it really lies in the focus on iteration. When Silicon Valley, where I reside, start putting up products that were consumer friendly you know user friendly like Apple the market advantage there was about iteration. It was the four, the five, the six the different versions that are constantly improving on themselves and iterating on what they got wrong, and even apps in the App Store that fix bugs and add features and all the iteration.

And what I found in my research with thousands of people is that people who succeed at changing their behaviors have only one thing in common and that's they think like designers, which

means that they practice or experiment with something and if that's something that fails them at some point instead of thinking they failed they iterate, they tweak it, they tinker with it and that's what sets them apart.

Danny Lennon: Wow. I think that's actually incredibly powerful and I think just as you were saying that that just lit up so many thinking in my mind of thinking about how this even relates to areas of nutrition and body composition change that so many people are after is that there is exactly like you say when we see someone relapse and trying to lose weight or they're trying to get somewhere and they feel they are making no progress it's exactly those feelings that you just mentioned I think are so common to people of feeling like a failure or they are doing something wrong or they are just not able to do this as opposed to this other mindset that you just laid out of here is a process, and if it's not working there's something here that we might need to change. It could be a bug that needs to be fixed, and if we fix those things then we can make progress and seeing that I suppose as distinct from the actual person themselves?

Kyra Bobinet: Yeah and Danny the other thing about that you know as you were talking about it made me think we have it all wrong. We don't expect bugs, we don't expect failure, we don't expect struggle, we don't expect disruption, right? I spoke with many people who maybe they got promoted at work and their shift changed or they got promoted and they had to move to new location of their company and away from their gym, and away from their grocery store whatever the case maybe we really have to get honest about this and say, "You know it's not a matter of if a design is going to fail you and you will relapse. It's the matter of when," and so the big miss here is why don't we have these conversations, why don't we – all the coaches listening on this are probably shaking their heads you know why don't we think about and plan for 'Hey. This is going to work for awhile, and when it doesn't that's a trigger to have a new design." Let's have a new design conversation because there's something about it that isn't serving you or maybe it's boring you or maybe good news you have moved up a notch and you need something new to challenge you.

Danny Lennon: Even some of those comparisons to when we have a piece of tech or software and these constant iterations or not thinking the first time we try something it needs to be perfect. Instead, expecting

we might need to change things as we go. Is there anything from your experience or any of the research you've conducted of what some of these conversations might look like or should look like in order to be successful or in other words if you were talking to someone now of how they might get this Design Thinking mentality or this mindset. What are some of those initial shifts they might need to do?

Kyra Bobinet: Yeah. I mean, you could tell it in people's language first of you know when I am speaking or interviewing with somebody I can always tell where they have rutted sort of failure pointing statements. For example, been there done that or I've tried everything or that doesn't work for me or other people can do that I can't like those kinds of phrases are very indicative of this mindset that leads to failure.

And the reason why that is, is then this fascinating me there is actually a newly characterized area of the brain called the habenula and the habenula is a little teeny-tiny area within a area called the thalamus which is pretty small itself and for many years we didn't know what it did, and then a couple of years ago information started to come in and pictures started to develop about at least one really critical function that it has in behavior change. So, number one it counts failure in your brain. If I think I failed at something it counts that, it's a scoreboard.

The second thing it does is it controls my motivation to try again. So, I think evolutionarily speaking it keeps us from touching the stove over and over again or doing the same stupid thing over again, but when we try to change our behavior like our eating habits it is our worst enemy and it's a thing that will kill somebody's motivation to try again. So, these comments of been there done that I affectionately call those habenuous scars. Yeah you can tell in somebody's language where they've been and what they think of it and the solution for that is this iterative mindset. It's you know little statements like God ain't done with me yet you know phrase from Oklahoma you know that's how they say it in Oklahoma where I grew up or I'm just going to figure this out. I'll figure it out or what's next that's another big one. People who think like designers do like all right what's next, what do I try next. There is a leaning in and leaning forward into the process itself. They search for things. They search for new foods. They search for new recipes. They're constantly in this kind of

active search much like a animal foraging for food they are in that gear.

Danny Lennon: Yeah. I think even onto that perhaps it could be a case of just that constant searching is almost one way to keep some form of momentum, right, even if it's not directly with your goal right now you're still making momentum and keeping that going by trying to see what's the next thing you can change instead of the common just giving up on that process altogether.

Kyra Bobinet: That's right.

Danny Lennon: One thing that I was intrigued as Kyra is when someone is about to try and adopt some new behaviors and make some changes or create new habits obviously there's probably a process from that decision to do that first the whole way to that becoming a engrained behavior. When someone is trying to do something new or something they haven't done before especially if it's one of these things that they've previously told themselves they can't do or it's for other people it's not for me. What are some of the things that are actually going on in the brain that kind of explain why that first initial part of behavior change is so difficult and how do someone get beyond that to the part where it becomes maybe a bit more automated? If that question makes any sense?

Kyra Bobinet: Absolutely that's a powerful question. I am so glad you asked it. So, basically I'm going to ask everybody, if you are not driving, to interlace your fingers and close your hands together, so you've got one thumb on top, it's different for everybody, and I'll call that your self image, your me, that's me to have my – in my case right thumb on top, right, and there is an area of our brain dorsolateral prefrontal cortex to be specific and some other areas that it coordinates with that's basically a feedback loop in your brain that says, "I am Danny and Danny does these things, and he doesn't do these other things." Right? And so if we were raised with a certain way of eating fried foods, desserts after meals, salads before meals whatever the case maybe that's your familiarity creates this comfort zone around our self image and there's nothing uncomfortable about it, right? And I am not talking about comfort foods that's a whole different dimension of it, but it's just what you're used to eating whether it's your country of origin or whatever is used to eating.

Now, open your hands back up and switch the fingers, and so what your question is, is why does this feel weird? Why is it that when you have the other thumb on top that every part of our body wants to switch them back. Wants to go back to where we're comfortable, right? Because behavior change creates this sensation, so this is easiest way to illustrate to ourselves what we're doing when we ask ourselves or somebody else to change their behavior is to put the other thumb on top and that immediately breaks that feedback loop of comfort and self reassurance, and it puts us in this groundless state, and we can tolerate that for a period of time but ultimately we have to acknowledge there is kind of this stretched bungee cord that wants to snap back to the old way. Wants to snap back to what we're familiar with, and there's almost this race to the finish line where our brain gets used to the new way before the old way completely takes power again. So, there is a story I had in my book and it's a very famous story about two wolfs and there is a grandfather who is talking with his grandson and the grandfather says, "Grandson I have two wolfs in my mind you know one is positive, and caring, and responsible, and honest and the other one is mean, and angry, and violent, and lazy, and dishonest." And the grandson says, "Well, which one is going to win grandpa?" And he said, "The one I feed." And so in our neuroplasticity which is a thing our brain can do when we change our behavior is it starts to become neuroplastic, it starts to create new connections with neurons, it starts to create new whole neural networks that compete with the old habits, the old way of eating, and if we invest in that new one long enough then the other thumb on top the new way isn't so uncomfortable anymore. And then, basically we have two copies, two options for that same behavior because the old one doesn't go away. It's just that we are feeding the new one.

Danny Lennon: Obviously a lot of these either previous behaviors that we've picked up or even just thoughts that might be preventing us from making change are these deeply embedded almost programs to some degree that have been shaped by our past life experiences, and at least from what I have seen it seems to be a lot of those can be subconscious that we're unaware of some of these. How do we get either ourselves or anyone else to at least become aware of some of these behaviors or thoughts or programs whatever we call them that might be undermining some of these things that you just mentioned?

Kyra Bobinet: Yeah. So, the brain is very stingy. Our brains want to be energy efficient at all times, and so 95% of our behavior it is estimated is in autopilot. Something I call the Fast Brain or in psychology it's called System 1 Thinking. It's the kind of jump to conclusions. For example, if you say easy as you know your brain concludes that with easy as pie, because we're trying to complete things quickly and move on. We typecast things, we stereotype, we have biases and these are all called heuristics. These are all those shortcuts in the brain that help us not have to think about how to tie our shoes or how to drive a car or things like that that we do every day and waste any energy, brain energy on these things.

So, when we change our behavior basically we have to spend – it's very costly for the brain, we have to spend a lot of energy, a lot of brain energy problem solving, decision making things that are on autopilot and these are the old habits. And the new habits are very costly, they've very expensive for the brain, and so when we try to invest over, and over, and over again that's the way that we build up this habit, and the more you do that the more you change and invest in that new change. You are almost like dropping pennies in a jar or I don't know what the other metaphor might be, but just building up a store, a savings account of what you're telling your brain is I want to do it this way now. And the way the brain works is after certain threshold of that it starts to make it more automatic. It's like a paved road. It starts to pave the road and the pavement is something called the myelin which kind of the protective coating around nerves that make the signal go much, much faster. So, once that is installed and we have a myelinated pathway in our brain, because we've repeated something over and over again then we don't have to focus on it so much, then we don't have to spend our energy or attention on it so much and it's much less costly for us. So, that's kind of how we grow and change and that sort of thing, and so there is absolutely an upfront investment that you can't get around. Any time you're starting a new habit of any kind or a new way of eating or changing your foods you have to spend attention on it and focus on it and repeatedly revisit it for a period of time. And there are known sort of places in that growth process like at 10 weeks there's a measurable way in which it becomes easier, but it just gets more and more easy from there the more you invest in it.

Danny Lennon: One part of this behavior change process that I wanted to ask about was the whole area of motivation, because again when

these conversations come up, at least to some degree it's talked about in various different ways or at least most people would think about oh I kind of know motivation is important to some extent or I need more of it or whatever the case may be. But motivation could be quite a generic and broad term to the point of sometimes maybe being meaningless. So, how have you get people to start thinking about that term motivation when it comes to behavior change, how should they classify that what is the things that you think are relevant that maybe a bit different to just thinking about this one generic term?

Kyra Bobinet: Right. So, just to revisit what the habenula conversation earlier, the most important thing at the very beginning is not to kill your motivation, but stoke it like a fire, right? And when most people say, "I need to get more motivated." What they're really saying is I need to care more about this and I need to remember to remember. I need to not get distracted, right, because they're expecting their emotions to be so hot and important that they'll continue to focus on it throughout the day because what they're basically saying is that their fast brain is taking over and they're forgetting that they care about this thing, right? That's what they're really saying when we say I really need to get more motivated or I need to pump up my motivation.

It is true that the only way in which we make decisions of all kinds throughout the day is coming from emotion, and it's also coming from our slow brain which is that 5% of our behaviors are being governed by the slow brain. But again it's very costly for the brain to do this, and so even though we might feel very strongly about something like for example, let he say I have a heart attack God forbid, if I have a heart attack it's a very emotional event, right? And maybe I eat a lot of fried foods things I know is not good for me, but my brain also has a desensitization mode meaning like I can't think about how scared I am for very long before my brain will protect me by suppressing that because it's a very uncomfortable feeling, and then I'll just kind of either deny it or live with the reality of it but I won't really feel it anymore. We all experience this when we first hear a song or watch a show or see a movie that really moves us, make us cry. When you watch it a second, a third time, a fourth time it doesn't have the same strength. So, we can see that our brain is going to respond like that, and so it's not good to just say, "I'm going to go get pumped up with this you know weekend motivational you know whatever event and then come home and change my life." You know

because that's a very quick half-life to that curve. It dies out very quickly.

The stronger thing is to have a little bit of motivation, but a lot of systems and what I mean by that is going back to the people who think like designers, to a person they all set up systems that work for them so that it basically mimics the fast brain activity. People who put their running shoes by the door, people who shop outside of the grocery store. There is a system, they do it every single time repeatedly. So, a habit is not as costly because it doesn't take a lot of motivation and emotion to remember that I care about this, and then once I'm in that caring mode to make decisions all of that is extremely expensive for the brain. Habits are much less expensive and burn less heart but they're a lot more reliable.

Danny Lennon: One thing that I think is particularly relevant to talk about especially within the whole fitness industry now is kind of the issue of negative self-image I guess in that to varying degrees or tends to at least a lot of people wanting to make change but a lot of that tends to be driven out of either a negative self-image or viewing themselves in a inferior light to others, and again we could talk completely different conversation how maybe that is primarily driven by social media and other things in this day and age. But there is a lot of this negative self-image and that is maybe playing a role in wanting behavior change. Is there anything that shows us where that places someone in the likelihood of making success compared to if that behavior changes fosters through I suppose more positive means or if we have someone who is experiencing a lot of negative self-image is that perhaps just going to undermine the whole process of behavior change or where does that fit into this conversation do you think?

Kyra Bobinet: Yeah. That's an excellent question Danny. I think let's unpack that a little bit, because for most people emotions are kind of this mixture of a lot of colors and they can't really pass them out. So, let's make a couple of incisions here. One is that there are seven primary emotional neural networks in the brain, in the animal brain which we are animals. There are three negative, three positive, and one neutral. The three negative are anger, fear and despair. Fear is the strongest one of those because we're all descendants of ancestors who correctly predicted that the wrestling bush was a predator, right? And so we are kind of evolved to be afraid of things, overly afraid of things. Fear

economics like with behavior economics you can see that fear of loss is twice the signal of fear of love of gain. So, if you take money away from me you could take half the money as you would give me as a reward and it would about the same signal from me.

On the positive side of emotions there is love, there is sexuality which a lot of people want to work out and is it that an urge or track a love interest in order to have a romantic life, right? And to be accepted in a social way, right? So there's love, there's sexuality, and there's joy, just play. So, the one that's neutral which is super interesting, which is the more powerful than any of the other six is seeking. Seeking behavior, curiosity, passion, looking for the right thing, looking for these things and your brain can't focus on more than one thing at a time really. They can talk, go back and forth but if you prime yourself and that means just like front loading your experience to then put your brain in a certain gear you prime yourself to constantly be seeking for the next thing then you won't have to rely on fear, you don't have to rely on loneliness or despair to motivate you, you won't have to rely on anger at whomever for those kinds of emotions, you won't have to rely on even sexuality which can lead to fear of not being appealing romantically. You can come out of love, and seeking, and joy, play that's what sports and games are for many people. So, that way once you know kind of how this all works you are much more in a driver's seat, you are much more able to have the experience you want to have and come from the right place that is healthy in doing these behaviors.

Danny Lennon: Kyra before we finish off here a couple of last things I wanted to make sure to get to. First, before I get to my very final question where can people find you and your work online, because I am sure a lot of people have found this particularly fascinating and want to go and dive more into your work or get even more of the details of some of the things we've discussed today. So, where is the best place for them to go online, what things should they be aware of that you've done etc?

Kyra Bobinet: Yeah. Thanks. It depends on what they want. I'm here to serve, and so if people who are listening this want more of the neuroscience side of things as it relates to apply it to your lives then I would point them at the book which is Well Designed Life on Amazon and my you know drkyrabobinet.com has a link to it. My company's website engagedin.com also has a link to it. If they

want to just practice eating habits that we've put together with this Wal-Mart app and this is open to the public by the way, and it has everything in it that has worked for thousands of people, has been distilled, and crowd-sourced, and also validated by the science into habits that you can practice on a weekly basis and that app is called Fresh Tri spelled T-R-I, freshtri.com and they can download it in any app store they have Android or iOS. Yeah, I think those are the main two things that I'll point people to if they want to follow up anything that's been said.

Danny Lennon: Awesome and for everyone listening I will of course link to all of that stuff in the show notes to this episode, so please go and click through and check that out if that sounds of interest to you. And with the Kyra we come to the final question that I always end the podcast on, and this could be to do with anything even outside of today's topic if you wish. Quite a big, broad, generic question so forgive me. But it's simply if you could advice people to do one thing each day that will have a positive impact on any area of their life what would that one thing be?

Kyra Bobinet: I would say that have an iterative mindset, focus on how do I get myself into a gear where I don't believe I am ever done and I am just looking for my next thing I need to try or tweak something I'm current trying so that it's better for me. if people can just stay in that mode they will be happy, healthy. They will have everything that they ever wanted honestly, and so that's what I think is most powerful thing right now for everybody to share with everybody.

Danny Lennon: Wonderful. Thank you so much for that and thank you so much for taking the time today to come on and to discuss some of these topics I know they're extremely important to all of us, and it's great to hear your insights. So, thank you for the time and the information today.

Kyra Bobinet: Thank you for providing this for everyone. Thank you.

Want to support the podcast? Here's how…

1. Leave a rating/review on iTunes: LINK
2. Support us on Patreon: LINK
3. Post on Instagram and tag: @sigmanutrition and @dannylennon_sigma