

Announcer: Bulletproof Radio, a state of high performance.

Dave: This is a reworked and upgraded episode of Bulletproof Radio, for sleep month, so you can explore dream land. Deirdre Barret PHD, guides us through the science of dreaming, nightmares, and even sleepwalking. You'll also learn how to remember and interpret your own dreamscapes. And my favorite hack, using a dream incubator to put your dreams to practice use. Major sleep hacking here.

Dave: Sleep. We all want a piece of it. Either you're getting some, or you're not. I've shared with you all the ways that I hacked my own sleep and how it changed my life, and how I'm up to the point where I can get about two hours of deep sleep, and two hours of REM sleep in six hours, which has been really transformative for how I feel, even how I look.

Dave: On the show, I've brought in top sleep experts to share their research and offer up some really solid hacks you can use, and since sleep is one of the things I get asked about the most, I just created a multimedia sleep series as part of better sleep month. Although frankly, every month should be better sleep month. So, I've chosen the most compelling and useful interviews from Bulletproof Radio, coolest articles from the blog, and a batch of different videos. Each week I'm going to bring you the best Bulletproof tips and tools for sleep that I know how to gather, so you can start sleeping better. Get hooked up with sleep on the blog at [blog.bulletproof.com](http://blog.bulletproof.com), and check out Dave dot Asprey on Instagram, where I post all the good stuff.

Dave: So, listen on, read on, and get your own piece of the night.

Dave: [Music 00:01:32]

Dave: You're listening to Bulletproof Radio with Dave Asprey. Today's guest is a psychologist from the Harvard Faculty. Her name is Deirdre Barret, and she's the author of books including *Committee of Sleep*, and *Supernormal Stimuli*, and an expert on lucid dreaming and how dreams contribute to creativity and problem solving. So, welcome to the show Dr. Deirdre.

Deirdre: Hi, I'm glad to be here.

Dave: Deirdre, the reason I wanted to interview you today is that you are the Editor in Chief of the journal *Dreaming*, and you've been the President of the International Association for the Study of Dreams, and things like that. And you even make something called dream art. And in the whole history of Bulletproof Radio, I haven't talked too much about dreaming. A couple Shamanic interviews here and there, but so many of the world's top inventors talk about having a dream where they solved a problem, and a lot of people listening to the show today are interested in problem solving or self-awareness. And I wanted to just have a real open conversation with you. How did you get into the idea of studying dreaming? Because it's kind of out there.

Deirdre: Well, I think my situation is probably similar to most dream researchers in that I had very high dream recall as a child, and I think I had more vivid wild interesting dreams than average. And so, if your own dreams are especially interesting and you remember them clearly, I think it's rather automatic to be just fascinated. I mean, everyone has some of that weird parallel world experience remembered, but I think I had more than average. So, I think that most people get interested in psychology and go into psychology, and then they pick a specialty well into grad school, but I think I did sort of the opposite that I was just always fascinated by dreams, and as I got to maybe junior high age or so, I got that if people are going to pay me to just think about dreams all the time, than I needed to major in psychology and go to graduate school in psychology.

Deirdre: So, I kind of picked the specialty before I picked the general field.

Dave: Oh, that's interesting. So, it was just a personal interest that drove you to pick becoming a Harvard psychologist just because dreams are so cool even as a kid.

Deirdre: Yes.

Dave: How do dreams change? I know kids almost live in a dream world. Like when I look at my kid's brainwaves on the EG equipment, and yes I hack my kid's brains, but you see a lot of theta state, and going with babies, we're almost constantly in this dream time. And as we become adults, our brains shift. At what age do kids sort of come out of the dream state and start being more aware of reality, and how often do we go into it? And when do we lose that, if ever?

Deirdre: Well, I mean there are two things going on there. One is the theta state you're talking about, that isn't actually when our full-blown dreams occur, but it's definitely a more imaginative imagery related state. And that is gradually waning, but the other, more specific thing that's gradually waning is that kids not only sleep more hours, but a higher percentage of their time is in rapid eye movement sleep when we're actually dreaming. Late stage fetuses have the most REM time. God knows what they're dreaming about, but then babies have the most of any post birth creatures, and then toddlers a little less, and older children a little less than that.

Deirdre: So, it's not a sudden oh, they quit at this age. It's a very gradual decline that almost plateaus in the young adult years, but actually there's a slight loss of percentage of dream time even throughout the adult lifecycle. But it's mostly from babyhood to the start of young adulthood.

Dave: And I'm going to ask you another very strange question here. Last year I came down with a brain eating amoeba, GI bug. And for four months I had really bad GI problems before I figured out what was going on. I got this from something as dramatic as eating salad. In Arizona. That's sort of a random thing. But the first week, when I had this, every night I would wake up with nightmares. I haven't had a nightmare in 15 years. I've done a lot of personal development work, but these were always things threatening me, threatening my company, and just sort of doom and gloom things that were so out of character for me that I'm absolutely certain that they were correlated with this really

bad gut infection that I had. Have you seen research, or have you come across this in patients where when people have something physically wrong with them, they start having nightmares?

Deirdre: Yes. I don't know anything about your particular amoeba, but bacterial infections that raise your fever a fair amount, definitely make people report more nightmares. And probably they're actually having more nightmares because the body is registering things are wrong, but also the fever is simply disturbing sleep, and since you have to wake up to remember a scary dream, you may simply be remembering more nightmares. But you're probably having more, also. And then there are other mechanisms, viruses trigger a lot of interferon in your body, which again is just kind of telling your body something's wrong, and you don't necessarily have a fever, but a lot of biochemical things are off. So yeah, a lot of infections can cause you to have more nightmares, and any number of drugs that you take for those infections also can be ... forgetting the name of the main ... the best modern anti-malarial drug, but it has a lot of side effects including daytime extreme anxiety for some people.

Deirdre: But it causes dramatic nightmares. So, sometimes it's the treatment of the infection, not just the infection.

Dave: So, the pharmaceuticals can do that.

Deirdre: Yeah.

Dave: I also routinely ask people, I'm an expert on toxic molds because I grew up in a basement that had toxic mold. And I filmed a documentary called Moldy, and for people listening who haven't heard me talk about it, it's at MoldyMovie.com. And one of the things I'll ask someone who says, "How do I know if I have mold in my house?" I say, "Do you have bizarre vivid nightmares?" Because it's really common when either you first get the mold in your house, or if you sleep in a moldy hotel room where you're just like, "What just happened to me when I woke up?" Is there some kind of an attempt for the body to communicate with you through dreams? Do you believe that? Or is this just purely physiological chemical stuff?

Deirdre: Yes. I mean, you're hitting the specifics that I know the least about. Mold and amoebas, I haven't actually seen research on their causing nightmares like viruses and bacteria, and some chemicals. But the general process question that you asked me, I'm not sure that I would personify it like the body is trying to communicate with you, although perhaps. But I think one phenomenon is just that things that aren't conscious by day often get through in our dreams because we don't have to pay attention to all ... our band of consciousness is pretty narrow compared to everything going on in our brain. So, by day, we're focused on everything we're looking at and seeing, and processing visually, and sounds, and conversations we're having, and your brain just have to be keeping you upright and balanced, and everything. And at night, there's no visual real stimuli coming in, your perception of sounds is damped way down. You're not having to deal with any balance movement stuff.

Deirdre: So, a lot of the things that occupy us by day are just not there in those brain areas, or are quiet at night. So, things like if something is subtly pressing on a nerve in a way that you don't even feel as pain, or you do have a lot of interferon running around your body, kind of making you feel vaguely sickish, just things that we wouldn't notice by day because they're being crowded out of our attention I think often get through into our dream content just because they don't have to compete with all the sort of basic visual input.

Dave: Okay, that makes sense.

Deirdre: I definitely hear a lot of stories about people who especially with kind of long-term illnesses, I do not put any kind of psychic attribution to some people that tell these stories as oh, this means my dream was knowing I was going to get cancer, or knowing I was going to get this neurological disorder. But it's very striking to me that it tends to be the disorders that are rather slow in forming in the body, where the process is there long before you would usually clinically notice it, where somebody has a dramatic dream that occasionally tells them they have cancer in a way that they understand it. But more commonly just in retrospect, as soon as they do get diagnosed with cancer, is about some monster growing in exactly that part of the body where the cancer actually was. And I think that's a function of just that our body is making antibodies even when they're not working against infections and cancer, and nerves are getting pushed out of the way.

Deirdre: And so, I see a lot of dreams that seem to be sensing things that the person isn't realizing and a doctor wouldn't diagnose yet clinically, and yet that are already going on in the body.

Dave: So, the vague sense of unease can come through.

Deirdre: Yeah.

Dave: I was with a person once where we had a toxic mold breakout, I'm not using mold here because I know that's not your area of expertise, but what she did is she woke up, and accused me of random things that simply did not happen. Like coming into the bedroom and turning the lights on and off, and then picked up the car keys, stormed out of the house, and got into the car to drive somewhere. And then went to sleep in the car. And she came back in a couple hours later, and I was completely bewildered. She had been asleep the whole time that she did that. And I didn't know it because her eyes were open and she was talking to me, but this was like part of a nightmare sequence that she was having. And I've read other things about people going places and doing things when they're still asleep. Is this something that you've come across in your research? Or something you've seen in patients? Or is this just one of those random things?

Deirdre: Well, that sort of thing can happen very rarely in some people who have something just a little different neurologically and will have an overlap of a sleep state with a waking state. It can happen spontaneously, and you're saying in this case it might've had something to do with mold. But where that's really common is some of the

benzodiazepine sleeping pills are very bad about producing hybrid states where somebody is not completely alert, they won't remember things, and yet they have their eyes open and they're able to speak as we are not usually able to during sleep. So, sleeping pills produce that sort of appear to be awake but aren't actually fully awake behavior pretty often. But it can happen spontaneously, even without sleeping pills. Do you know if she had taken a sleeping pill?

Dave: She had not taken a sleeping pill, and wasn't on any weird medications. And it happened on probably the hottest, most humid night of the year when we were both experiencing all sorts of weird symptoms that we didn't yet understand what they were. So, that was always our theory, and some of the mold experts have talked about this strange ... people keep having strange nightmares. But it wiggled both of us out because to be moving around and walking and talking, but asleep, I didn't quite realize that that was something that was possible until I saw it.

Deirdre: Yeah, well I mean, I've heard similar stories a lot to sleeping pills, and occasionally for other assorted or no obvious reason.

Dave: Okay. Well, let's switch gears into something where I know you've spent a lot of your work, which is how do we put our dreams to work for us? And I've been interested in lucid dreaming for 20 plus years, and I do interesting types of neuro feedback that often times will cause me to have more intense dreams. And I've looked at various techniques for creating lucid dreams, and even the sort of out there stuff like astral travel. Like you perceive yourself leaving your body and floating around, and all those kinds of things. What's your take on the usefulness of dreams? Can we put them to work for us?

Deirdre: Yes. I mean, first of all, I think they're naturally already working for us to a certain extent without us having to have any very specific intent about that. In my work from my book *The Committee of Sleep*, where I went around interviewing experts in all fields about whether they ever had had a dream that was useful, the majority of the examples I collected were completely spontaneous. I mean, the narrative would often be you know, I never paid much attention to my dreams until I was working on this chemistry problem that I just couldn't solve, and then one night I had this dream where dream solved it. So, people who aren't particularly paying attention to their dreams can sometimes have breakthrough dreams. I think it happens a lot more in cultures that explicitly teach that dreams may be useful for practical things, because I think some of the problem solving dreams are so obvious that when you wake up, it's just you remember being told exactly the literal answer to this problem.

Deirdre: But some of them that are just a little bit more metaphoric, and it takes a little reflecting on whether that could actually be the answer, I think a lot of westerners might brush the dream aside, and they've had a problem solving dream, and they'll never know it, whereas in a culture where you're taught that your dreams are going to show you a better way to build a hut, or where the prey animals might be hiding this month or something, and you have a dream, and you immediately kind of think about whether that's telling you something, it's a lot likelier to be useful. So, I definitely have spent a lot of time developing dream incubation techniques that help people guide their dreams

toward particular questions and problems, and those can really increase the rate at which our dreams give us really practical help.

Deirdre: But I think simply paying attention to the dreams you're already having, is the first big step toward that.

Dave: Well, the reason that I invited you on the show is that I think everyone listening to this would love to know some of those techniques, and I think a lot of them will probably want to read your books about this, but what are the steps that I could take or anyone could take to do that?

Deirdre: There's sort of three different levels of steps. And one is just to increase your dream recall to get more of the content that's already there that may be helpful. And first of all, just to have the dreams. Sleeping seven or eight hours a night is very important because we dream about every 90 minutes, but each dream period gets much longer than the preceding one, so if you sleep four hours instead of eight, you're not getting half your dream time. You're getting like 20% of your dream time. So, short sleeping hurts us in a lot of ways, but it impacts dreaming sleep more than the other forms of sleep. So, sleeping eight hours is just the single most important thing to increase your dream recall. But also paying attention, telling yourself as you're falling asleep that you want to remember your dreams in the morning, keeping either your phone with some recording app on it next to the bed, or an old fashioned paper and pencil to write with.

Deirdre: And when you wake up in the morning, to just take a moment to think about whether there's a dream there. The recall for dreams is so fragile that if you hop and pay attention to something else, a dream that sort of was in your memory will be really gone. I think everyone's had the experience of kind of waking up and going, "Oh wow, what an amazing dream." And then half an hour later, when they're trying to tell somebody, they can remember that thought of having an amazing dream, and they can't remember what the amazing dream was. So, going over it in your mind at least, and writing it down or recording it preferably. So, just making an effort to remember more dreams, lots of people find just opens up a whole other world to them.

Deirdre: The second step though is in thinking about more explicitly interpreting them. And the best forms of dream interpretation are not some expert telling you what they think your dream means, or certainly not those cookbook things that say, "If you dream of a dog, this means X. You will have bad fortune. You will have good fortune." The best interpretation, even if someone else is doing it for you, is to help you figure out your own symbols and metaphors, asking somebody, "What is a dog to you? Pretend I'm from another planet and tell me about dogs." And one person will say, "Well, they're big, fierce, scary animals with sharp teeth that can bite you." And the next person will say, "They're loyal, they're man's best friends, they're more reliable than your human friends." And the next person will say, "Oh, they're these cute little baby-like things that we need to protect." And for those three people, the dog in the dream will represent those three very different things.

Deirdre: So, sometimes it's helpful to have an objective outsider querying you on these things, but you can do a certain amount of this yourself, just playing through each of the main

characters, or animals, or activities, and kind of what does this represent to me. And then kind of stringing it together. Is there anything in your waking life right now where it feels like there's some helpless little thing that's being menaced by a big scary thing. And et cetera. And especially focusing on the emotions in the dream. Is there anything in my waking life that gives me that gut feeling in the pit of my stomach that I had when the witch was chasing me down the hall in the nightmare, often gets us in touch with things that are important in our waking life that we've kind of been shoving aside.

Deirdre: So, interpretation is important, but then the sort of third most advanced step is in trying to guide and influence your dreams. Which of course isn't worth doing until you're remembering them decently. But then, you can tell yourself as you're falling asleep, anything as simple as you want to dream about a particular person, or topic, or as specific as that very technical problem at work that I'm stuck on, I'd like to have a dream that showed me some other solution to this. And just kind of form your question or problem, or topic as a simple phrase or sentence, to repeat to yourself, "I want to dream about X", as you're falling asleep. And then, because dreams are so very visual, it's helpful to come up with imagery that relates to it. I mean, if it's a person that you're trying to dream about, obviously you picture them. For more complicated problems, you may have to think a little bit more about what one or several visual images go with them.

Deirdre: And if you're a pretty good imager, just doing that in your head as you're falling asleep is what you want to do. But if you're someone who doesn't really have very much visual imagery clearly when you're awake, you might want to put some real physical object by your ... on your night table. Like just a photograph of the person you're trying to dream about, or some little grouping of objects that represents the problem or question so you have something to physically stare at, so that one way or the other you're getting a visual image in because our dreams are so visual that they're cued even better by imagery than by words. So, do those two things. Kind of tell yourself what you want to dream about, stare at or eyes closed visualize something connected to it. And in one of my studies where I had college students trying to solve fairly simple problems that they would eventually solve but had not yet solved, like homework problems for some of them, they were doing this incubation for one week at bedtime.

Deirdre: And 50% of them dreamed about the topic of their problem in a week of doing this, and about one fourth solved the problem. And now, that part would vary a lot depending on how difficult the problems were, and I think would drop off some from this easy problem situation. But the about 50% of them easily in a week achieved the topic they were targeting. That seems to hold up across lots of kinds of content.

Dave: That's pretty impressive.

Deirdre: Mm-hmm (affirmative).

Dave: Are there supplements or herbs that make it more likely? I know 5-HTP, and L-Theanine I've heard people talk about those as things that can ... I assume those can manipulate sleep quality, but I have a friend who says he takes 400 milligrams of Theanine, and has

hours and hours of fully lucid dreaming every night. Doesn't work for me, but have you come across magic potions that give you better dreams?

Deirdre: Those are two I haven't seen research on REM, and in the case of 5-HTP, I don't think it's thought to be very relevant to REM. It's definitely a precursor for serotonin, which should help you go to sleep easier and sleep more soundly, but that's just sort of generally falling asleep. And obviously if you're trouble recalling dreams it's because your general insomnia might be useful in that sense. There's at least one study on B6, which does serve as an enzyme precursor to some of the things that are necessary to rapid eye movement sleep. There are two of the Alzheimer's drugs have been studied and found to slightly increase the odds of having lucid dreams, which we'll talk about more in a minute, the dreams where you know you're dreaming while you're dreaming. They don't generally enhance dreaming, and they actually make you wake up more often. Probably lucid dreams are a little closer to waking.

Deirdre: So, there's definitely a lot of research on chemicals that either increase dreaming a bit more, or alter it in some way. None of them seem to be just really dramatic effects for all people, but they'll be statistically significant if you have a reasonably large group, and it certainly makes sense because our neurotransmitters in our body are influencing, just that the rapid eye movement sleep starts at all, and different qualities of it. So, the substances that are precursors for neurotransmitters are very likely to have some effect. On the other hand, our body has all these homeostatic mechanisms kind of regulating that we don't have way much more than it considers normal at any given time, and sort of pushing back and damping down excesses of things. So, I think that keeps the effects from being real dramatic.

Dave: Do you remember the names of the Alzheimer's drugs? I'm guessing Memantine might be one of them?

Deirdre: Galantamine is the prescription one that's been studied. And the other one is that really common health food store. Basically both of them are effecting acetylcholine, one of the neurotransmitters that is involved in rapid eye movement sleep. And they're both pushing the REM sleep a little closer to the arousal threshold, which both can wake you up and interfere with sleep, and personally I tried the Galantamine, and it mainly made me sleep less well.

Dave: Me too. I've tried that as well.

Deirdre: But in the well-controlled studies, again, there are a lot of things that show some effect when you've got a large enough group, and it's averaging over the group effect, because for a few people it's working very well. So, it seems to be anything that pushes acetylcholine up is somewhat likely to push lucid dreaming a bit, but also to wake you up a bit more.

Dave: And for people listening, who aren't familiar with our neurotransmitters, acetylcholine is one of the stimulatory neurotransmitters, and there are lots of herbs that'll prevent your body from breaking it down, and you can take it directly. But too much



acetylcholine causes muscle cramping and tension, and so there's a big complex interplay here, and I think what you said is really important Deirdre, that the stuff that works for one person may completely not work for another person, which is why these complex stacks of all sorts of different things ... you're going to get results that are very different because some things can be working against each other in the same stack.

Deirdre: I think that they don't work dramatically, they work no better than some of the more just psychological practices that you can do to have more lucid dreams. So, I definitely do not recommend doing prescription Alzheimer's drugs to see if you have more lucid dreams. Even though I just said I have done this. Do as I say, not as I do.

Dave: Well, the audience of all of our videos is the kind of people who are probably willing to self-experiment a little bit, but there are long-term side effects from most of these things, but if you did try it once and you looked at the drug insert and decided if it was worth the risk for you, I'm sure some people will try it. And there are lots of reasons why you might want to or not want to, and I'm grateful that we're in a society where people can be free to make that choice. I may or may not have experienced a difference when I was or wasn't experimenting with micro dosing LSD, where you're taking about 5% of a normal dose of LSD as a cognitive enhancing substance. Have you come across any research in changes in dreams from people who are taking way below the I'm going to go have a trip doses of hallucinogenic drugs?

Deirdre: I haven't seen any research, per se, on that. Oh, on the micro dosing LSD, specifically. I have not seen any.

Dave: Okay.

Deirdre: There's actually, there are a lot of drugs where coming off them seems to produce dramatic dreams. You certainly don't want to become alcoholic and go into withdrawal just to have really, really vivid dreams, but that increases ... actually getting drunk on a given night, it will reduce your REM sleep through the early part of the night, and then you'll tend to have a little more REM toward the end. But people who are withdrawing from ... who are really habituated to alcohol and are somewhat in withdrawal have huge amounts of REM sleep. So, lots of the dreams are nightmares. I mean, some of the worst nightmares in the world happen then. But some really kind of dramatic ... it's just more vivid in all directions, and vivid visual imagery. But to a lesser extent, the amphetamines, most of the stimulants, MDMA, so people are coming off those, there's a kind of a heightening of REM in the sleeping off ... you pretty much can't go to sleep, including dreaming sleep while you're on most of those substances.

Deirdre: And there does seem to be a high rate of report of vivid dreams after any of those stimulant drugs, including MDMA which doesn't really feel like a stimulant, but people can't sleep on it and it's closely related to amphetamine. Doesn't feel as speedy as amphetamine or coke, or most of the quote stimulants.

Dave: What about Ketamine? I've been working with a physician, an anesthesiologist, who uses Ketamine to help people deal with PTSD, and also during certain types of IV infusions that are really uncomfortable. Is that something that effects dreams?

Deirdre: I think most of these drugs haven't been studied for their effects on dreams specifically, and the ones that effect dreams the most are not generally the dreamiest. They are things like the stimulants that then they're essentially suppressing REM sleep while you're on them, and then you have this kind of REM rebound after them. And some of the drugs, like LSD and Ayahuasca, and I'm not sure I'd put Ketamine in this category, but the ones that induce kind of dreamy states while you're awake and have some of the transmitters that would be involved in REM sleep higher than ... you wouldn't necessarily ... you might even get a rebound in the other direction of kind of less dreamlike activity once you finally go to sleep.

Dave: Okay.

Deirdre: No one coming down from Ayahuasca really worries about whether they're dreamlike if they've just been through 12 hours of hallucinating awake.

Dave: Yeah, you're probably just glad you can go to sleep. Because you're a little worn out after that. At least that was my experience. Now, one of the most incredible books on dreaming that I've read was a book on Tibetan Sleep Yoga, and this is an obscure book. I read it maybe 10 years ago and I'll get the exact title, but it's probably called Tibetan Sleep Yoga, if I remember right. This was a guy who's a llama somewhere, and he starts out the book saying, "Look, I'm a really busy guy. All day long I'm teaching, and I'm being a monk, and all these things. So, I found I didn't have time for meditation. So now, when I go to sleep, I do all my meditation while I'm asleep because I'm actively dreaming the entire time I'm asleep, so I do all of my personal enlightenment process work while I'm just essentially sitting in Lotus pose while I'm asleep." He's sleeping laying down, but in his dreams, he's full on meditating consciously.

Dave: Is this just like a half human sort of person? Or is this a state that maybe people listening to the show could achieve, where like wow, I actually can consciously either work on my personal development process, or put all of those eight hours of nightly downtime, can I put those back into production? Is this possible? Do you know anyone who does this?

Deirdre: Yeah, probably if you devote your entire life to studying Tibetan Buddhist practices you could. I don't think it's easy for most people to learn to do the things that they are talking about. And the Tibetan Buddhists have all kinds of dream practices, and different branches of them seem quite different. They're way more interested in dreams than Buddhists or other branches of Buddhism. But they're actually there are two books out there by Tibetan Buddhist monks that have pretty much the title Tibetan Dream Yoga, but they differ by one word, and I'm not keeping them straight right now. One is by a Tibetan who settled in Virginia and has his main center out of Virginia. And his book is all about how you're supposed to, as you fall asleep, meditate on different ... like the heart chakra with a red Lotus there, while breathing through your left nostril lying on your right side to induce a certain kind of dream. All this sort of position, nostril, chakra, and color will produce certain kinds of dream content.

Deirdre: And it's this very precise obsessive system of having the dream you're supposed to have next. And then the other one is probably the one that you're talking about, or maybe there's a third where there's a lot more emphasis on developing lucid dreaming. It's actually advocating lucid sleep in general, that you should learn to be aware as you're falling asleep and watching yourself sleep. But that's the one that talks about how you can learn to do your meditations in your sleep.

Dave: Yeah, that's the one I read.

Deirdre: Yeah. But my understanding is they are talking about things achieved after 10 years of kind of full-time practice of these things, for the most part. Unless one is going to devote one's life to Tibetan Buddhist practices, I don't think they're the particularly quick ways to go about getting some kind of dream control. But I mean, I totally believe that they happen, and that those people are talking about very authentic, very interesting experiences.

Dave: Those 10 year type practices kind of piss me off because a lot of us have careers and families, and things we want to do in the world, so I actually started a neuroscience thing up in Seattle called 40 Years of Zen, and the point of 40 Years of Zen is to be able to teach you to put your brain, when you're awake, into the same state as someone whose done 40 years of daily Zen practice. It's been a big part of my personal development thing where I'm like, "Wow, I can really push things." But you're really inspiring me to think about whether I can measure the brains of some of these people and find out what they're really doing when they're asleep, and then make it teachable in less than 10 years. So, you totally gave me something to work on there, thank you for that.

Dave: Because some of these states, they tell you to meditate on the heart, and look at these lotuses because they don't have ways to say, "This is what's happening in the brain", so they're trying to pick up the feeling in the body and then use language for something that's the world of feelings, not the world of language. So, it's very hard to translate that. Even any discussion around dreams. You and I are running into that same problem where we're trying to describe something that only you see, even though someone next to you might be seeing something different, but in a similar state. And I think that's why a lot of research is really behind on sleep. Maybe not sleep, but on dreams specifically, and that's why I wanted to talk to you because like oh, let's look at that because it's interesting. Which is, thank you for doing that work, because it's also hard.

Deirdre: Yeah, well actually let me tell you a little bit about the techniques that I think so far work best sort of in a quicker way for Westerners, which are ... these tend to be pioneered by Steve [LaBerge 00:39:26], or to be alterations of things that he's had out there for 20 or 30 years. And basically the most effective low tech approach, if one's not going to spend one's life meditating, seem to be a combination of what we call daytime reality checks where you ... a part of it is just asking yourself I you might be dreaming right now. And taking that question seriously. And thinking about it. Freeform is good. But then to have some very specific reality checks where you have determined things that seem to work differently in your dreams versus awake, and you check a couple of those things.

Deirdre: And none are completely universal for all people, but some of the things that are likely to be different in dreams for most people are most people can't read well in their dreams. Some people can't read at all. Any letters will look like hieroglyphics. Other people can read a short sentence, but they'll lose the flow after that. Other people can read something, but if they look away and look back, it says something different in a dream. So, if you think about how, you know, written language behaves in your dreams, then you know whether you just have to find something to read, or whether you need to read something, look away and look back at it. But for a lot of people, that works well, is one of the checks.

Deirdre: Also, clocks and watches do not work properly for most people in dreams. They will not change time every minute, or they will change much more than a minute, or they will not change in sequential numbers, or they'll be displaying numbers that don't correspond to possible times. Or they'll be blurry and vague, and can't read and understand the numbers. So, thinking about what time pieces do. Most people, if they flick a light switch in a dream, it won't immediately dim or greatly brighten the light. It might have no effect, or it may dim it just barely, or there may be a lag time before the dimming or brightening. So, there are a number of things that work differently for most people, but you have to identify a couple for yourself. These work this way in my dream, and they work this other way when I'm awake.

Deirdre: And then take seriously doing that. Ask yourself if you're dreaming, just freeform, notice if there's anything that doesn't seem too plausible to waking, and then whichever couple you've picked out, go over and flip a light switch and then pick up something with written material on it. And it's hard to get yourself to take the question seriously. We all feel like well, of course I'm awake. I know I'm awake. But to really, really ask yourself that question and test it. First of all, it usually has some kind of interesting effects, just then and there in your waking state, to really take that question of how do I know I'm awake seriously. But a lot of people report that that's just a very interesting state of consciousness, even as you're practicing it. But the main point is that any new practice that we do by day is likely to carry over into our dream.

Deirdre: So, if you check whether you might be dreaming regularly, several times a day, awake, you will very likely have a dream in which you're remembering to do your am I dreaming practice, and you'll do it in the dream, and the light switch won't work, or the writing will. So, that's one of the two main techniques. And the other thing that is also very helpful, and they also combine well, is much closer to the dream incubation I already described to you, where you're trying to influence the content of your dream that night in any way, but very similarly to how you might say, "I want to dream about X problem", or, "I want to dream about X person", you're just telling yourself, "I want to be lucid in my dream tonight. Tonight in my dream, I want to know I'm dreaming."

Deirdre: And you tell yourself that as you're falling asleep, and again, some kind of imagery to go with that. If you've ever had a lucid dream already, you might kind of replay the moment in that dream where you realized it was a dream in your mind. Because again, a kind of a narrative or a visual imagery will get through to your dreaming mind even better than the verbal part. So, if you practice those two things regularly, it is very likely to increase your rate of lucid dreams.

Dave: A couple times I've been tempted to order these little devices that I've seen, this is going back at least more than 10 years. It's like a little thing you wear on your belt, it looks like a pager for people who are old enough to remember what pagers look like, and it just has like a green button on it. And the idea is you wear this thing during the day, and you check it to say, "Is the light green?" And you sort of tell yourself, "It won't be green if I'm in a dreaming state", so that you start questioning, exactly like you just described, am I dreaming now, am I dreaming now, so that when you have a lucid dream you sort of know it. Have you ever tested a device like that? Have you heard of people who've done that?

Deirdre: Steve LaBerge did one of the first versions of sleep goggles. There are all kinds of less expensive imitators working off the same things. But his had one little electro lead to detect rapid eye movement sleep simply by the eye movements themselves, which is much ... Anyone that claims they're doing EEG leads off a simple cheap device is not really measuring brain waves. But right on the surface you can pick up the muscles controlling the eyes. So, he had one lead to detect eye movement, and then a very soft red light would flash. And you had to, by day, keep telling yourself, "If I see a red light flashing, it will mean I'm dreaming." You kind of did this reminding yourself and especially reminding yourself if you fell asleep, but then you wore this device that was detecting rapid eye movement sleep and blinking a red light at you. And he did some well controlled research, and it definitely increased the rate of lucid dreams.

Deirdre: It tends to wake a lot of people up every REM period if the light is not just at the exact right threshold for them. And again, I wore this device some, and it was making me recall every REM period at night because it was waking me up a little bit. But I slept with it a few nights, and then one morning I woke up and I'd thrown the thing across the room in my sleep. I guess because my sleeping mind didn't like the lights flashed at me. So, again that's the range you see. I would've been one of the not success stories in the group, but definitely there were people having more lucid dreams than if nobody was sleeping with that device.

Deirdre: And then he also though, we can trick ourselves about any of these things including the reading and light switch thing that I just told you about, because with his goggles, he did have some people report dreams where it was a red light flashing in their dream, and they would wonder why that was. And then they would kind of say, "Oh, there must be a cop car going by, or it's a fire engine going by outside making the blinking red lights." And they'd proceed with the dream without being lucid. I think Steve LaBerge's funniest story about a missed cue was something he never developed for the general public, but he was trying on himself, which was he had a sleeping with a REM detector electrode, and when he was in REM it would activate a tape recorder that he had attached to it that would play a recording of his own voice going, "You're dreaming, Steven. You're dreaming."

Deirdre: And again, just like with the red light, the threshold was attempting to be set just high enough that it would be perceived in the dream, and not so high that it would wake you up. And he actually found some success with that, but his funniest dream was that he was in his sleep lab, walking around the hall, and he began to hear Steven, you're

dreaming. And in the dream he thought, "Oh my God, someone's gotten a hold of my sleep tape, and as a joke they're playing it over the loudspeaker system."

Dave: So, he was definitely mixing his realities there, and that can be a little confusing.

Deirdre: Yeah, I mean, a sleeping mind will rationalize ... when coming up with why this could be happening, sometimes it makes up some other explanation it considers plausible, but this works because a fair bit of the time it goes oh, the light switch is not working. That's because I'm dreaming, rather than light switch is not working, that means I need to call an electrician. So, it triggers lucidity enough of the time that it certainly increases the rate of lucid dreams.

Dave: That is so cool, and this is something that I think is maybe missing from a lot of the discussions in biodegradable hacking, where these altered states that come when we're asleep can have real value for us. And I'm grateful that you've spent so much time writing about these in your two books, and just putting some science behind something that it's hard to measure because it's all subjective.

Dave: Well, thank you so much for being on Bulletproof Radio, and thanks for your extensive work on dreaming and lucid dreaming. Where can people find out more about your work and your books?

Deirdre: I have a website which is DeidreBarrett.com. You just need to spell it right, D-E-I-R-D-R-E is my first name. Then no break Barrett, B-A-R-R-E-T-T dot com. And on the main page, one category is books, one category is my academic research, and one category is my dream art. So, click on any of those, or if you just want to see the art, slash art, or the books, DeirdreBarrett.com/books.

Dave: Deirdre, you do some really interesting work around dream art. Can you tell me about that?

Deirdre: Yes. I've been studying other artist's art my whole career, but recently I found that even though I can't draw well, that by taking photographs and doing some heavy digital manipulation, that I could really bring my dreams to life, so I've been making this digital dream art. One series is a dream I had of wandering around Harvard Square discovering weird little animals lived on the rooftop, so I've got every building in Harvard Square with weird little animals. And it's just really fun to drag visual images from the dreams into the waking world.

Dave: Some of the really cool art in existence comes straight out of people's dreams. I think that's really cool that even though you're a Harvard psychologist, that you're also going there from an art perspective and I appreciate that. And I think a lot of people who hear this episode will be really intrigued to see some of your art. Excellent. Well, thank you for being on the show, and I look forward to having really, really good dreams as a result.

Deirdre: Okay, it was fun to do this.

Deirdre: [Music 00:52:12]