

The Human Upgrade: Episode 1102

[00:00:00] **Dave:** You're listening to The Human Upgrade with Dave Asprey. Today, you're going to learn about quantum biology. You might have noticed in the last 100 or so episodes, if you're a long-time listener, and keep in mind, not a lot of people have heard all almost 1100 episodes of The Human Upgrade. There's enough hours to qualify for a two-year college degree worth of lectures in these things.

[00:00:28] So you probably have gone through the back catalog. You've probably found stuff that's interesting to you. I've been annoyed by the word quantum for a long time. It's like having a tachyon drive in Star Trek or something that doesn't actually work, but we just make it up.

[00:00:47] And so I promise that someone out there has the turbo quantum upgrade supreme extreme. And so it's a word because it's at the cutting-edge that's open to misuse. At the same time, tons of emerging evidence suggest, or I would just say, tells us that the world we live in is actually a quantum world.

[00:01:14] And it's funny because if you go back hundreds of years to the enlightenment, the start of scientific thoughts and trying to decode Mother Nature, we've started at a high level, and we're at a place now where most people who haven't studied believe that we are chemical beings.

[00:01:34] If you were to go back a 100 years before the American Medical Association and Morris Fishbein, who really trashed the place, they got in bed with Rockefeller, who was the world's greatest monopolist, and realized if you could sell petroleum-based chemicals as medicines, that was a monopoly you could get.

[00:01:57] And so they set about trashing natural medicine, and herbs, and all that sort of stuff, and electrical medicine, which was thriving under guys like Royal Reif and even a little bit of Edison and certainly Tesla. So the old world had the argument of, are we chemical or are we electrical?

[00:02:15] And chemical won, even though we are both chemical and electrical, because electricity drives chemical reactions. But what we know now is that all of that is nonsense, except it's really useful models for how the world works. You can use them but they're not accurate because we know biochemistry isn't the same as regular chemistry.

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[00:02:38] In fact, there are different degrees in college. Because biochemistry behaves oddly. Why does it do that? Because of quantum tunneling effects inside of enzymes, inside of microtubules, inside the body. And the fact that you can do weird things with enzymes that allow chemical reactions to happen with far less electricity or heat than would normally be required, which is good because we would literally catch fire or burn if we didn't have biochemistry.

[00:03:03] Which means, yes, we're electrical. Yes, we're magnetic. Yes, we're light. Yes, we're chemical. And underlying all of that, we are quantum. In fact, reality itself is quantum in quantum physics, quantum computing, quantum biology. These are real things, despite the fact that someone out there is probably selling quantum Cola. And to make this even more complex for you, there are products, including some that I have tried and be like, this stuff works, and it's crazy.

[00:03:29] And there's double-blind clinical trials that are starting to use quantum effects to affect our biology. And I've even funded research at the University of Washington with Dr. Gerald Pollack around this fourth phase of water that involves quantum effects and how water can enable quantum tunneling.

[00:03:46] And the research showed, surprisingly, that if you mix certain kinds of fats with water and apply heat, it changes the structure of the water in a way a lot of people wouldn't believe is possible, except you can see it on a microscope, so it must be real because you can actually see it with your eyeballs.

[00:04:01] You don't have to just feel it with your heart or some airy, fairy quantum thing that's still real. If all that confused you, yeah, it confuses me too, yet I'm not willing to deny that a quantum reality exists because it does. So, there. That's our introduction for the show.

[00:04:16] Our guest, Dr. Clinton, has 15 years of experience working with people on overcoming the health problems that I dealt with when I was younger, things like autoimmune conditions. And frankly, I still have a few of those left, but there are a lot less than they were. A Lyme disease, which I think is almost always mold toxicity. I had both active Lyme and toxic mold brain damage.

[00:04:41] And Catherine's an interesting guest and someone for you to learn from today because she had to heal herself, and she's healed her patients. And what we're going to talk about today is

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something that's really profound. Health is rooted in your connections to other people. And we're going to talk about quantum biological systems, how they're connected to the world around us.

[00:05:05] And if you like this episode, you'll want to hear the one with Dr. Rollin McCraty from the Global Coherence Initiative and several other entities throughout time, just saying, it's more complex than what we see with our eyes and hear with our ears. With no further ado, Catherine, welcome to the show.

[00:05:22] **Catherine:** Thank you so much for having me, Dave. It's an honor to be here, and I am really excited to dive into these topics with you.

[00:05:31] **Dave:** Give me your definition of quantum. What does that mean? Can I have a quantum Lego set? Because I want one.

[00:05:38] **Catherine:** That's coming. The latest Blockbusters have quantum in the name. Like you said, it can get really annoying, but there is this wealth of evidence out there talking about what quantum biology is. And that's really the study of quantum phenomenon in living systems. And it's the flow of electrons, of protons, photons of light, phonons of sound, and how they impact our biological system.

[00:06:13] And it started out with this idea, back in the day, of quantum physics with Erwin Schrodinger. This idea that maybe our biology has some quantum effects to it. And like you said so eloquently in your introduction there, the chemical mechanical model of biology has really reigned supreme and still does in medical schools, and mainstream science, and in your doctor's office, but those ideas are starting to be turned into a layer of understanding, but not the whole picture.

[00:06:52] And that's where quantum biology comes in. In the early 2000s, we had some amazing researchers who are still doing research out there, Fleming, and Greg Engel, and Seth Lloyd out of MiT. The first two were out of UC Berkeley. These amazing researchers were looking at photosynthetic bacteria and how these bacteria capture a photon of light and then transfer that to the photosynthetic center in the cell.

[00:07:24] And they found that just like the early quantum physicists talked about that duality between our matter being a matter and a particle but also being a wave, and that wave function

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allows for all those quantum phenomena of quantum tunneling, of superposition, of coherence. And that's exactly what these researchers found 20 years ago.

[00:07:52] And at first, the scientific community laughed at them. And then when they looked at the calculations, they were like, oh, okay. We are going to start doing the same research. Because what they found was that when a photon of light is captured by these cells, it takes a wave pattern.

[00:08:12] So it actually tunnels and superimposes and takes multiple different paths to find its fastest path to that photosynthetic reaction center. It acts as a wave until it reaches that center where it completes photosynthesis and the giver of life here on earth. And the really interesting thing that they also found was that it didn't act alone.

[00:08:38] When quantum physicists are studying quantum phenomenon in a laboratory, they are cooling everything down below absolute zero where no life can exist. They are shielding the lab from any heat, from any vibration, from any sound. And this is quite the opposite of what's happening in a living system. So everybody was like, absolutely not. This can't exist. And what they found was that it was that noise.

[00:09:07] It was that chaos of life that added the coherence that kept that photon on its fastest path. It was like the crowds in a marathon where the marathon runner falls down and they say, come on, keep going, keep going to your goal. Keep going to the finish line. And so that's what they found. And the evidence has been pouring in ever since then.

[00:09:34] **Dave:** In quantum biology and just in, actually, quantum physics, a lot of people have heard about that idea that if there is not an observer, then the waveform never collapses into a particle. And in our large human egos, we like to believe that we are the observer. There's just one problem, and I wrote about this in Smarter Not Harder.

[00:09:58] Your brain doesn't get the first electrical wiggle of reality for about a third of a second after reality happens. Which means you might have a distributed array of billions of tiny little consciousnesses called mitochondria. They are the observers of reality. And they work together as a collective consciousness, a distributed collective consciousness to focus on reality.

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[00:10:22] And when they're not there, people say, there's no observers. Did you sterilize your laboratory? Because there was an E. coli in your drain that was observing reality. And so if you have a truly sterile environment, you don't really have reality, which, do you know this? Tree falls in the woods, and there's no one there to-- there was the trees were there to see it because there was life.

[00:10:42] And whether you're talking about chloroplasts or mitochondria, similar structures, those are the roots of conscious observation in the world, according to my beliefs after I wrote Head Strong, my book that went deep on mitochondrial biology. This has to be how consciousness works. And I see that stuff every day at 40 Years of Zen.

[00:11:01] The implication would be that if you can train your network of mitochondria, your unconscious, to focus on the things you want, you might collapse them down into reality. And then they might be more likely to happen, which is what data shows in multiple guests like Lynne McTaggart, Rollin McCraty, who was just on, and many others have talked about that.

[00:11:22] That's the secret behind the secret with Jack Canfield, who's also been on the show. So this is where biology meets consciousness, and it's so cool. And you seem like one of the few people who would really get this.

[00:11:34] **Catherine:** It is so cool, Dave. I love looking at the research, and I love being able to point people to studies. But there's also this validation of what we've intuitively known. And you're talking about consciousness and mitochondria as the observer. And that's so spot on because really, our genes, our DNA, our mitochondria, the water lining all of our cells in our fascia, it's liquid crystalline in nature. It's acting as this antenna picking up on all this information.

[00:12:12] And you yourself, so many in your audience are hip to the idea of how important light is. But there's this step before that where sound is coming into play. And these pressure waves of sound are creating infrared energy. And that's something that the ancient indigenous cultures always talked about, and the Big Bang theory.

[00:12:38] This idea that it starts with this inelastic collisions of molecules creating sound, creating light. And that is the idea behind consciousness, behind everything that you just

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explained. It's really incredible to be coming full circle and having research to validate these ideas.

[00:13:05] **Dave:** In the beginning, there was the word, which sounded an awful lot like, and every major religious tradition has some-- even amen is that thing plus, I don't know-- they put the N in from some language 5,000 years ago, but we all have these things out there, and it's written there, and probably that's what the Big Bang was, was the first consciousness, at least in this universe, saying, oh, let's wiggle a little bit and see what changes.

[00:13:31] And so we can interpret that as a explosion of all this stuff. You can also interpret that as an explosion of consciousness and awareness that's growing logarithmically, which is probably faster than logarithmically, but it's growing really quickly, which is why the universe expands. So which one of those stories is real? I think they both are. They're just different lenses on reality, right?

[00:13:52] **Catherine:** Absolutely, absolutely. And that's the nice thing about quantum biology, is that it allows for that interconnection. It allows for multiple paths to be traveled at one time, multiple stories to be true at one time. And people, when I talk about this, they're like, that's not what I learned in school.

[00:14:10] And what about those receptor cells and the key and lock model? That's what dominates mainstream medicine, is that allosteric model where you have keys floating around, and they find their receptor, and they unlock, and then biological action happens. Now, we know that happens, but what happens before?

[00:14:32] What attracts them is looking like it's quantum physical in nature. It is vibrational attraction. It is that structured water that lines those molecules, that lines those enzymes, and receptors, and keys, oscillating and vibrating at a certain frequency and attracting each other. So it's not that one negates the other. It's that both are true. And that's one of the exciting things, I think, is that we can have multiple things be true. It's just a deeper layer of understanding or a different chapter in the book, so to speak.

[00:15:15] **Dave:** It's funny. There's something called the standard model in physics that describes reality really well. And then a guy who's been on the show, Nassim Harim or Harmeem. I'm forgetting his exact spelling, his last name. The guy from the Resonance Academy. He's a ski

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instructor who had an awakening, and he created math that describes reality better than the standard model.

[00:15:37] But because he's a ski instructor, they canceled his speech at CERN, the big super collider. Because how dare you impinge on our story of reality? And is the standard model true? It's highly useful and mostly accurate, but it's not actually true. And probably neither is his model because there's always multiple ways.

[00:15:56] So I wish we would replace the word, that's what I learned, to, that's what I was programmed with. Because possibly there's three different ways to explain something. I don't know. Like Lyme disease, or like any of these other health things, or autism, for God's sake, it's not one cause of autism. The mostly chemical industrial pharmaceutical complex, in their reality, it's always one cause.

[00:16:22] And there's no proof that that's the case. And in your world of functional medicine, and in the world of biohacking, it's rarely just one thing. Just like you want to bake bread. All you need is yeast. If you don't have flour, it doesn't work. Got to have more than one ingredient to make some cool stuff happen.

[00:16:36] **Catherine:** Absolutely, absolutely. And that's really the birthplace of quantum biology, was Erwin Schrodinger, this quantum physicist, brilliant, said, okay, I'm going to walk across the street and talk to the biologists about DNA because I think what I'm doing here applies to life. And that stepping out of the box, which we are not encouraged. to do. We are built in.

[00:17:02] I love that idea of that's how I was programmed because it is. We are programmed in school. Medical school especially has all of these imprints, and malpractice, and standard of care, and how dare you step out of the box. But when we do step out of the box, those interconnections and those multiple paths can be traveled for a deeper understanding.

[00:17:30] And again, this can sound so esoteric and so woo, but I'm actually literally talking about scientific understanding, a deeper understanding of biology and how life works, and how stepping out of the box can allow for that.

[00:17:50] **Dave:** A well-constructed podcast or even more, a well written book has the ability to change your lens on reality, your view of the world. It's like installing an app on your phone that

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gives you a new ability. And this is why we have great works of literature, great works of science that stand the test of time.

[00:18:08] And until the last 10 or 20 years, every kid had to read them because then we all have the same apps installed and we could communicate with the same world, the same frameworks, which is part of consciousness. And so this is a call to you. If you're a skeptic or a true believer on either end of that, you've been programmed.

[00:18:27] You just have to be curious about it and understand you can explain the same thing multiple ways, and that's okay. And you're not going to die if you don't know the right one, even though you might have failed the test in high school.

[00:18:37] And so I'm open to these thoughts. And one of the studies that I think you're familiar with was when a biologist and a quantum physicist partnered up to look at protons spin in the brain. Do you know about that one?

[00:18:49] **Catherine:** Oh, absolutely.

[00:18:50] **Dave:** You're only person I know who knows about that. I saw the original thing on PubMed and was like, this is the most important study ever that no one ever talked about. Tell me about it.

[00:18:57] **Catherine:** It's fascinating, and I think we should take a little step back and talk about birds first because it helps us understand why this would be important. And this is a well-established theory and understanding of how birds make their annual migration without any map, without any land stops, without their GPS.

[00:19:21] How are they doing this? They're doing this, it seems, because these photons of light that enter their eyes become entangled. And they become radical pairs. So when you have a radical pair, it's a free photon that can be paired with another photon of light, and they become entangled, meaning that they are inseparable in formation.

[00:19:49] So like a shoe, if you take a pair of shoes on a trip and you only end up with the right shoe, you know that that left shoe is at home, and you know what it looks like, and you know what the color is and the size. That's a very simplistic analogy for entanglement. And the same thing can be said for quantum entangled particles.

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[00:20:13] And so these birds are using entangled photons of light with the magnetic field of the earth to get an accurate, immediate time shot of where they are and where they need to go to migrate across the earth. Now, this same phenomenon is happening in the cells, in our neurons, in the brain.

[00:20:40] We have these protons, and the spins become entangled, meaning that once we know about one of those, the other one, the information is ascertainable. And not only that. They live in this relationship, even separated by billions of miles. This is something that is not local. And we can talk about that neat discovery too, but these protons in the brain, the spin of these protons are being informed by magnetic fields.

[00:21:18] And that just opens up a whole new window of how EMFs impact our body, how we might have a sixth sense with that magneto reception, just like the birds in their annual migration do. And it opens up a deeper understanding of how neurons are functioning. We have this idea that it all comes down to electricity.

[00:21:45] Those axons fire, the electrical conduction is sent on its way. And just like you said, that's actually really slow when it comes down to the math of it. That's very slow. A fraction of a second is really slow. And we're finding that the Niels Bohr Institute out of Denmark has done amazing research about how those neurons are actually conducting sound.

[00:22:13] And that gets turned into a piezoelectric charge through the fascia, through the liquid crystalline structure, and then is turned into that electrical conduction. When you add in an entangled radical pair, then you have this instantaneous communication that's happening that is something that we have never ever appreciated in modern science. And that study was one of the first. I think it came out last year. Just absolutely mind blowing

[00:22:48] **Dave:** But what this study found was that we all very recently learned how to watch protons spin in living cells. So they looked at, I don't remember what kind of animal. It might have been a human, but whatever. I think it--

[00:23:00] **Catherine:** Human. Yeah.

[00:23:01] **Dave:** What they found was that every time your heart beats, the spin of protons in the brain, all at the same time, would change direction. And that means, with absolute clarity and

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proof, unless there was some mistake in the hardware, which probably there wasn't, that we are quantum systems.

[00:23:22] And quantum is so much faster than the speed of light because nothing is transmitted. Light, something's moving. But with quantum information, there is no lag time at all, even if you're on the other end of the universe. If two particles are entangled, you snap your fingers here, that finger snaps at exactly the same time.

[00:23:38] So given that the cells in our body are talking at a quantum level that's so fast, dude, we're so slow. We're 350 milliseconds. Unless you hacked your brain, you might be a quarter second. If you're young, you're not going to see it. And when something changes in your quantum reality, you won't know it changed because it just looks like reality changed.

[00:23:58] And we've just proven in that study, just by itself, without any of the other data points, that, oh my gosh, we're quantum. And all the others said that we think is causative, it's happening, but it's happening on top of the quantum effects. Which is why if we can go to the lowest levels, we have the most leverage to make efficient change in the world, or in our own consciousness, bodies, and in our own healing, which is where you focus.

[00:24:23] You talked about fascia, which is an amazingly important part of the body that is, funny enough, made out of collagen. Almost like collagen might have some magic powers. I'm the guy who made collagen a billion-dollar business in the world. So I think collagen is important. Talk to me about fascia, collagen, cells, and gels, and all the other cool stuff.

[00:24:40] **Catherine:** Our fascia is a network. And there's some controversy about how that's defined. Some people are defining it even in liquid form in our lymph, in our blood. But just a traditional definition of fascia is the collagen network, that connective tissue network within our body that connects to each and every cell in our body through those microtubules, through that cytoskeleton of the cell.

[00:25:10] And this connective tissue network is made up of mostly, predominantly, collagen. And when you look at collagen on a quantum level, on a nanoscale, because quantum phenomenon, that's where it's taking place, at that level. When you look at it at that level, you see that it's a triple helix.

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[00:25:36] So we're familiar with the double helix in the DNA, but the triple helix of tropocollagen tubules, they create these small little nano sized tubules. And what we see is in Gerald Pollack, like you were talking about, and his team out of the University of Washington, first identified this structured water, which had been talked about, and theorized, and proposed by many different researchers for a while.

[00:26:05] But he found that against hydrophilic surfaces, we build structured water. And the hydrogens are more tightly bound. It's this lattice structure hexagonal in shape, like a honeycomb. And as one sheet of structured water forms from the input of infrared energy, then it acts as a template. Yeah, exactly.

[00:26:32] Then as one sheet forms, it acts as a template for more sheets to form. And he started with synthetic, like Nafion and different materials like this. And then he took it to collagen. And he recreated a collagen tubule. He immersed it in water and added that infrared energy. And what you see immediately is that that structured water starts to form not only on the outside of the tubule, but on the inside of the tubule as well.

[00:27:02] And not only that, but that structured water, and that lattice formation, and that liquid crystalline capacity of the water, it's able to trap energy and use it for biological action. It is able to create a flow of liquid, of water, and protons through that recreated collagen tubule, just like those tropocollagen nanotubules that we have throughout the body.

[00:27:30] And it transports water, and fluid, and protons. It creates this ability for our collagen network, our fascia, to jump conduct protons anywhere in the body almost instantaneously. So now you have this quantum highway of fascia throughout the body that is able to transmit energy information at a scale that chemical, mechanical models just don't have.

[00:28:02] So it's really, really fascinating. And I talk a lot with my husband, and thank goodness, he's such a check on me all the time. He's like, what do you mean instantaneously? Nothing can move faster than the speed of light. And it's like, last year, the Nobel Prize in physics was awarded to three scientists who are doing work on non-local quantum entanglement, meaning that the scientific world has validated this idea that, yes, we can't travel in space and time faster than the speed of light, but in a non-local universe, we don't need to travel through space and time. We can jump conduct there. And that's what's happening with protons.

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[00:28:53] That's what's happening with quantum entanglement, what's happening with these things that sound just out of this world, woosters kind of science, like the proton spin in the brain being influenced by the magnetic field of the heart.

[00:29:10] The same thing was shown the year before in human cells using light and flavins in our cells, which again are those benzene rings that can hold and capture light information. And when put in a magnetic field, they have a radical pair, and they are adjusting their function as a response to the non-local quantum phenomenon. It's just really mind-bending.

[00:29:43] **Dave:** It's almost like polyphenols and bioflavonoids, which are those anti-aging compounds you read about in my longevity book. Might interact with light inside the cells if you get sunlight, which we've been talking about for the entire length of time in biohacking, that those are doing something. And it's a clear case to never, ever expose yourself to the sunlight because it might benefit you, and then revenues would go down for the drug company.

[00:30:10] So please, guys, for your own safety, through the financial benefits of Big Pharma, lock yourselves indoors, never go outside in sunlight. And if you do, smear yourself with something to prevent the sunlight from transmitting anything to polyphenols and bioflavonoids. We have to watch out for the profits of our overlords. Okay, there. Now the AI loves me. Okay, we can continue.

[00:30:33] **Catherine:** Exactly, exactly. You've got your polyphenols, and there's another great study that came out showing that they actually capture those leaked electrons from the mitochondrial electron transport chain and just funnel them back in much like molecular hydrogen, except something that has always been in our world, and that it doesn't stop there.

[00:31:02] The benzene ring, it's in our melanin. That, of course, has a function in our sun, but it's not only that. Melanin is very predominant in the cochlea in the inner ear. So that idea of sound and sound waves creating infrared energy that is captured by melanin is a whole new way to look at hearing.

[00:31:25] **Dave:** Do you know what melanin is made out of?

[00:31:26] **Catherine:** I know that it is a benzene ring composite.

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[00:31:30] **Dave:** There you go. So I got really deep on melanin when I was writing *Head Strong*, my book on mitochondria in the brain. And it actually informed some of what I do at 40 Years of Zen, the neuroscience mystery school thing that I run. And what makes that dark color in your skin, or neural melanin, which is inside the brain where there's no sunshine, or ocular melanin in the back of your eye where there's no ultraviolet, or cochlear melanin, is cross-linked polyphenols called melanoids.

[00:32:03] Guess what the largest source of polyphenols and melanoids is in the US diet? Yes, it's coffee. So coffee and consciousness actually do go together because it makes it easier for you to make melanoids into melanin. And this is also why if you know someone with really dark skin, you can't tell how old they are because their skin doesn't age very much compared to pale skin.

[00:32:30] That's because when you have more melanin, you can turn light, or heat, or sound into electricity via that piezoelectric effect. So you have it in the brain for that reason. It also acts as a capacitor. And in electrical engineering, a capacitor looks something like this. But it's basically a way to store a large amount of electricity for instantaneous use.

[00:32:56] And so when you have a strong need for that in the brain, I believe the neural melanin is there in part to help you with that burst of insight. You need it, but you have to recharge it by moving, by making extra body heat through functioning mitochondria that can create heat or electricity. But if they don't make the heat first, you don't get the benefits.

[00:33:17] And that's why mitochondrial uncoupling is so important and why I've had a podcast episode on that. So you get into all these things going, oh my God, our systems are really complex. But if you give them the raw materials, you can believe what you just shared about fascia and collagen. And you can actually look at Dr. Pollock's work.

[00:33:36] And by the way, this is a quick shout out. I have funded some of Dr. Pollock's work through the biohacking conference a few years ago. But he reached out during the pandemic and is at risk of losing his lab. So if you are a large donor who wants to advance consciousness and core cellular biology, you should reach out to Dr. Gerald Pollock.

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[00:33:56] And if you DM me on Instagram, I could help you do that. So if someone out there is like, oh my God, I love this stuff, he needs help, and it's beyond my ability to help him. So at least financially right now, otherwise I wouldn't.

[00:34:08] **Catherine:** I appreciate that. I appreciate that because it's all of these researchers are not being funded by the powers that be right. NIH, they want you to be researching something that leads to a drug that leads to a device. And so I am really grateful for your sponsorship and your support of Pollock's work. I have tried to raise money as well. I just did a fundraiser for John Stuart Reid's work. He's going to go to Egypt and study sound, and water, and send a sample. I'm sorry. I missed that.

[00:34:45] **Dave:** I just said, oh, neat. It's awesome because Egypt is where they knew a lot about sound, right?

[00:34:50] **Catherine:** Absolutely, absolutely. He's going to go to the Great Pyramid and the Red Pyramid with a group of vocalists and record that frequency and hope to capture it in water. And so he's going to look at sound, but he's sending vials of water from that experiment to Pollock to look for light signatures.

[00:35:10] **Dave:** Wow.

[00:35:11] **Catherine:** Yeah, it's so cool. And it's so underfunded, and they're working at just bare bone capacity. So I really, really appreciate you, Dave. Thank you.

[00:35:24] **Dave:** Oh, you're so welcome. And thank you for helping all this stuff. It's important. Like advanced physics research, we used to have some government funded national laboratories that would do that. And now it's all gone to mostly private companies who don't share the research.

[00:35:39] So there's a lot of things that we would have known that we don't know today. It's just important that the people who are doing it have the ability to do it and then talk about it because you want to know how you actually work so that you can upgrade yourself. You can hack your own biology.

[00:35:55] What if you didn't know any of this was going on and you just kept trying to take chemicals? Chemicals work. At least some of them do, and some of them have unintended side

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effects because of what we're talking about. So if you know about this, you can better design chemicals or the stuff we're doing at Upgrade Labs.

[00:36:11] We're using pulse magnetics. We're using specifically pulse light frequencies. So when someone comes in, in a membership model, we're totally rocking their biology in a way that's unexpected. And it makes a huge difference in how you feel. This is why I'm looking and feeling the way I do now versus the way I did when I was half this age.

[00:36:31] I was pretty trashed in my early 20s. And to be able to come back from that, from Lyme/toxic mold, and chronic fatigue, and fibromyalgia, and all that which are near and dear to your heart, you actually do need to understand fascia and what's going on. These things are real.

[00:36:48] So let's get into some of the work you're doing here that goes beyond that idea that cells can make electricity through vibration. Talk to me about what structured water does in the body and the difference between drinking structured water versus making it yourself on board.

[00:37:08] **Catherine:** This is just reminding me, actually. This is a total aside, but Veda Austin does some neat crystallography with water, and she was looking at your coffee, and it makes this beautiful wheat pattern that none of the other coffees make, and so I was like--

[00:37:24] **Dave:** Yeah, I know why Danger Coffee does that. I don't think it's just minerals because it is mineralized. Does mineral water look prettier than regular water, or does it have to be structured?

[00:37:35] **Catherine:** It has to be structured. Yeah. The difference is between the two is when you are drinking structured water, it's going to be more hydrating. There's evidence out there on agricultural research, on research with livestock, on research with humans as well that this is beneficial for our hydration, which benefits so many different things.

[00:37:59] But the idea that we drink eight ounces of structured water and that leads to eight ounces of structured water within us is a fallacy because there's that transaction that's happening between the water and the light or the frequency information inside of us. So the ways that we structure water that we drink are very similar to the ways that we structure water in our body. We add energy into it, and that is what structures it. Movement, light, all of those things are going to structure our water.

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[00:38:38] **Dave:** One of the things that structures water is intent. And I will tell you, it's one of the things that structures coffee. And there's a very specific reason. By the way, I wasn't planning to talk about this. You can tell because I'm using my phone as a thing, but the logo for Danger Coffee right here, it actually says danger right on it, but the subtext is "who knows what you might do." And that intention is there in the coffee. And I think that helps.

[00:39:05] **Catherine:** Absolutely, absolutely. It totally does. And then we're taking a step out into that more--

[00:39:17] **Dave:** Danger Coffee is encoded with the nature of the universe. And when people drink it, they're guaranteed enlightenment in three seconds or less. That was what I thought I heard you say. Was that it?

[00:39:25] **Catherine:** Yeah, that's basically-- in a nutshell.

[00:39:32] **Dave:** All right. That's not real to be really clear, although it is encoded with some information. We were talking about something else besides-- we just finished with coffee.

[00:39:47] **Catherine:** We were talking about the difference between drinking structured water and having structured water within us. There's a relationship there, obviously. Structured water has been shown in research to be beneficial for plant growth and agricultural research, livestock health, human health.

[00:40:08] Structured watering companies have done such a wonderful job marketing that. People think that's how you get structured water inside of you, is you drink that structured water and then that's it. But it's really the relationship between the water that's lining our cells and the information, the infrared energy inside of our body.

[00:40:30] And that can come from sound. Our fascia that we were talking about earlier actually makes sound. We can measure that in a myogram. Our heartbeat makes an amazing beat of sound that helps structure the flow of that water. John Stuart Reid has done amazing research.

[00:40:50] And Professor Sanjul G., in collaboration, did research about how the beat of the heart helps our red blood cells hold more oxygen, bind more oxygen. Not only that. It increases their lifespan and helps repair some of those red blood cells that are on their way to being dead and dysfunctional. And so, yeah, it's absolutely amazing.

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[00:41:21] **Dave:** Here's what that made me think about. Sorry to interrupt for a second there. Donald Rumsfeld doesn't have a heartbeat. This is true. He has a mechanical heart that's continuously flowing with no heartbeat. Does this explain a lot of the modern world?

[00:41:35] **Catherine:** It can.

[00:41:39] **Dave:** Donald, if you're listening, I'm sorry, brother. But dude, you need to atone for some of that crap you [Inaudible].

[00:41:50] **Catherine:** In a nutshell, yes, it explains everything, but really, we have to understand that it is this dance of the water inside of our body and the frequency information that's creating that infrared energy, infrared light. And we have to remember that our DNA, mitochondrial DNA, our nuclear DNA, they are also a big source of infrared energy, and light, and biophoton emission.

[00:42:23] And so you ask yourself, why are there all of these compounds, and melanopsins, and opsins in places where visible light can't reach, external light can't reach. It's because there's this communication happening at all times with polyphenols, and amino acids, and our DNA, and the structured water that's lining it and able to act as a conductor.

[00:42:53] There's some great research, and it's actually old, showing that our DNA is as efficient in conducting electricity as a semiconductor. And adding that idea of the structured water that's lining the DNA, then you have this whole different idea of genes and what's happening there.

[00:43:18] **Dave:** I had a professor, I think of physics, maybe from Carnegie Mellon on the show, and I mentioned that elements of biology like DNA and the lining of your nerves exhibit room temperature semiconductor effects. Because all semiconductors are really doing is they're slowing the speed of electrical flow.

[00:43:42] And they're subject to something called the Hall effect. And if the Hall effect affects you, then you're super conducting. And he's like, biology is not superconductive, hard materials only. Gallium arsenide doping only. Okay. No, either there's Hall effect or there's not. So there's all this cool stuff that you've tapped into.

[00:44:03] One of the things that you talked about here, melanopsin sensors, I want to go deep on those for just a second to talk about how incredibly effective they are for biology. If you look

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at the melanopsin sensors in your retina, it's about 5% of retinal cells are melanopsin-sensing cells. And that means they receive light.

[00:44:25] They actually receive more light per cell than all the other cells in the retina. And I've looked at these in Dr. Satchin Panda's lab down in San Diego. And you can see them in a microscope, and they're studded with more mitochondria. That's how you spot them. And the light that they gather doesn't go into your optical nerves at all.

[00:44:46] It goes around your optical nerves into the timing system of your brain. And we know the four colors that affect those. So I invented glasses-- this is my True Dark company-- about eight or 10 years ago that block all of those things plus the angle of light and intensity of light, which are all the variables that control those sensors.

[00:45:05] And when I wear those, I can fly from Victoria, British Columbia, to Dubai and get no jet lag just by tuning the light that goes into the melanopsin centers with true dark glasses. That's why you see me usually wearing those yellow glasses when I'm under bad lighting. Because it makes that big of a difference for circadian timing, which is totally controlled-- that's not true-- which is, first and foremost, controlled by light, then by a bunch of other variables like when you eat, and social interactions, and exercise, and temperature, and probably sounds too.

[00:45:40] But we don't except you might because you have a quantum sound master class because we know enough now to teach people how to structure water with sounds. Tell me about the master class that you're teaching.

[00:45:53] **Catherine:** It actually is a fundraiser for-- that's what I referenced earlier for John Stewart Reid because--

[00:46:00] **Dave:** That's cool.

[00:46:01] **Catherine:** Yeah. So all the prophets go to his research, which is a collaboration with Gerald Pollack. And it just is a look at, like you said, there was the word, and we start with this idea of how that was always something that was prevalent. And then we talk about the Big Bang, and then we get into what sound is.

[00:46:25] And we all have this idea of sound, but there's also many different layers, many different frequencies, and hertz, and noise, which I would say has the opposite effect that sound

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does. And looking at how what sound is really a mechanical wave. And we can take this as far as coming full back to the beginning of the conversation of consciousness.

[00:46:57] And when we look at a neuron and see the neuron begin to move and create these inelastic collisions of molecules creating sound, thus creating infrared energy. And maybe that's how sound, and consciousness, and conscious thought can imprint water. Because we know that so much research has been done and disregarded by mainstream science, Luc Montagnier, Jacques Benveniste on water memory.

[00:47:33] And this is really what John Stewart Reid and this upcoming research trip that they are doing in Egypt is looking at, how those water molecules are able to coalesce and trap EMF frequency, whether that be light or sound creating light. And it comes back to some of the work with Albert Szent-Gyorgyi, and Gilbert Ling, and Emilio de Gilche, and the quantum electrodynamic theory of water.

[00:48:06] And what it says is instead of the structure water that we've been talking about lining the cells, in water, just in a glass of water, you can have the same phenomenon, but it's not this hexagonal sheet like a honeycomb. One researcher describes it as the hydrogens are holding hands. And it creates these domains.

[00:48:32] Some researchers are referring to it as coherent domains versus incoherent domains in water. Some refer to it as an excited state of water versus a ground state of water. And what they're finding is that these coherent domains are actually able to trap and match the frequency inside of that domain.

[00:48:58] So if there is a certain hertz or a certain EMF, like Luc Montagnier was doing with HIV and different viruses, that coherent domain of water is able to trap that information and keep it as water memory. And then you can actually-- what he did in his research was, he recorded that frequency that was in that domain, sent it to a lab in a different country, sent it to Italy, and they played that frequency on a glass of water that had nucleotides in it, the building blocks of DNA.

[00:49:42] And those coalesced and created the exact same, up to 98 point something percent identical DNA as the virus from which it came from. And so it's just this incredible idea of sound frequency and the interaction with water, the water inside of us, the water inside of a glass, the water in the world around us. It's pretty fascinating stuff.

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[00:50:14] **Dave:** Here's a study that I'm guessing you might not have seen, but you're very well read, but it's just from a different domain. Darwin had his theory of natural selection, which is Darwinian. And a little bit dark. You outcompete, and over time, your genes mutate. But there's some very startling things that happen that break that on its face because mitochondria mutate far more quickly than genes do.

[00:50:40] And some researchers took a bunch of bacteria that could not metabolize lactic acid because they didn't have those genes. And they put them in, basically, a petri dish full of water where there was only lactic acid as a fuel source and nothing else. So they should all starve to death. Most of them did, but some of them magically sprouted the ability to metabolize lactic acid as a fuel source without the genes to do it.

[00:51:10] I wonder if the structure of the water and really just the information field of the planet might have had something to do with that. That's the only thing that I can think of that explains that. Have you seen that study? Have you heard about it?

[00:51:22] **Catherine:** I have. I have.

[00:51:23] **Dave:** See, you know everything. This is so cool. I love being able to talk about all this nerdy stuff with you.

[00:51:28] **Catherine:** I wouldn't say everything, but that study, yeah.

[00:51:31] **Dave:** So cool.

[00:51:32] **Catherine:** It is so cool, and it just opens up this whole new world. Again, I am so grateful that you funded and helped with that research because imagine if we could get more answers about this. Because back to elementary science class, the water cycle, we know that the water on this planet has been here from the beginning. And so what information is present there that we aren't utilizing and we could be utilizing? That's an avenue I would love to see more focus on.

[00:52:13] **Dave:** And I am absolutely sure that you can put information back in water. In fact, one of my dear friends, TK, has a company called Life Force Water. It's what I was drinking at Burning Man, and it's infused with hydrogen, which is a whole different podcast. I've done a

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couple on hydrogen, but it uses this crazy apparatus with very high intensity light, pulse-specific frequencies to charge the water energetically.

[00:52:38] So you're drinking highly structured hydrogen water. And I'm like, okay. I'm always a little skeptical on this stuff, but I've known TK for years. All right, I'll give it a try. It feels different to me. And the idea that you could get water that way in special packages so you get hydrogen all is cool.

[00:52:56] I don't have any marketing agreements or anything. I just drank 40 liters of that at Burning Man, and it was very effective. So what I would like listeners to take away from this is that not all water is the same. Your intention structure is water. And if you heard the podcast with Dr. RollinMcCraty, we actually talked about how they can pick up your heart's magnetic field in a glass of water that's three feet away from you.

[00:53:23] I know you and Rollin are friends as well. So for listeners going, Dave, what are you doing here? Here's the deal, guys. I have been studying consciousness for 25 years. That trip to Tibet, to Mount Kailash, near the holiest mountain in the world, where I had the idea for Bulletproof Coffee, that might be a hint.

[00:53:39] And the fact that I've done shamanic training, I've been talking about plant medicine since the dawn of biohacking. I'm just talking a little bit more about consciousness and longevity today because it feels like the world's ready for more consciousness right now, where maybe at the beginning of biohacking people would have just thought I was crazy. They're dead. Because how dare you upgrade your own biology? But yeah, how dare you not [Inaudible].

[00:54:03] **Catherine:** Yeah, absolutely.

[00:54:04] **Dave:** So Quantum Sound Masterclass fundraiser, you didn't drop a URL there, and I would like listeners to know, if you want to know more about this very new science, where do they go?

[00:54:14] **Catherine:** I am Dr. Catherine Clinton everywhere. So my website is drcatherineclinton.com/soundmasterclass. I just didn't--

[00:54:27] **Dave:** Okay, I'm going to fix that for you because no one can spell Catherine. I know because I sign books, tens of thousands of them. Catherine can be spelled 18 different ways at

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least. So C-A-T-H-E-R-I-N-E, Clinton. So it's drcatherineclinton.com, and you'll have a button right on the front of your website about the sound masterclass, so they don't have to remember the rest of all that stuff that I already forgot?

[00:54:53] **Catherine:** Absolutely, absolutely.

[00:54:55] **Dave:** I like that. So dr, D-R, catherine, C-A-T-H-E-R-I-N-E, clinton.com is where you go to get the sound masterclass. How much are you charging for it? Is it expensive?

[00:55:05] **Catherine:** It's \$47.

[00:55:06] **Dave:** All right. There you go. Guys, you want to support a good cause. All the profits go to research, and you'll probably learn something cool. I haven't been through the class. I can't endorse it that way, but through this conversation, Catherine's on to some stuff about the interactions of the core parts of our biology that are totally invisible to your conscious mind unless you're in an altered state, about how we can tune those and change those, and how you can change the water you drink, the water in your cells, and how you can use sound to do it.

[00:55:33] I know because some of the 40 Years of Zen stuff, we have very carefully designed sounds that you listen to doing the neurofeedback. We have a patent on 3D sound for all biofeedback, which is a core patent for the tech behind 40 Years of Zen. Because the direction of sound is another thing. Do you want to be surrounded by sound, or do you just want it in one ear?

[00:55:53] All of this stuff matters. And we're also using specific sounds to induce brain states, like Tibetans have done with singing bowls for at least 5,000 years. So sound has an effect on our biology. And those effects are through the auditory canal which is full of, what was that dark compound in your auditory canal? Oh, melanin. Who would have thought?

[00:56:18] So the fact that you're teaching a class on this is really cool. I'm looking forward to attending the class myself and learning some more about this emerging type of biohacking. My prediction is that the next 10 years of biohacking is all about frequencies. And I don't like the word frequency as much as I don't like the word quantum.

[00:56:37] Because people say, oh, it's embedded with frequencies. I'm like, oh, really, what's an avocado frequency? I don't know, but my quantum angels told me. No. There's a frequency of

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color, there's a frequency of sound, there's a frequency of magnetic resonance from electrons bouncing around.

[00:56:50] You got to pick what frequency you're talking about and how to measure it. So don't fall for marketing that just vaguely talks about frequencies are beautiful. You got to know what they are. This is real science. It's not woo. And then when we talk about quantum, there are quantum effects. You can see on a microscope that you can detect with equipment.

[00:57:09] So this is where quantum biology meets ancient practice. And I believe that many of the most powerful experiences I've had in my life, whether it's on the side of Mount Kailash, or at Burning Man, or at an ashram somewhere, are when we're in a state where we can more closely access our own biology and we can actually go in and even experience quantum state change.

[00:57:33] I know we can create it when we heal other people, when we do sound healing, especially bioenergetics. These are techniques that we can tune our body to do if you believe they're possible, and you have the right tools. So, I don't know, a 47-dollar Quantum Sound Masterclass sounds cool to me. I'm in.

[00:57:51] **Catherine:** What you're talking about is real. There's so many different layers of sound. Directionality absolutely matters. Back to John Stewart Reid and Professor Sanjul G., they found that headphones really induce that vagus nerve. And we know that that is good for so many things, anti-aging and inflammation, versus a whole sound immersion.

[00:58:18] And then the different frequencies of sound are really, really important. And I, too, share your same frustration with these words that have always been part of popular vernacular, like frequency, and quantum, and all this stuff, but it's hard because those are the words that actually mean what we're talking about in science. So there is this other layer to them as well.

[00:58:46] **Dave:** One of the brands that I reluctantly work with is called BioQuantum skincare. And Jewels is the founder who has been on the show. And we talk about it, and it's very frustrating because when I use this stuff, I notice reductions in scars that were very fast and unbelievable, almost, were things that were bumpy.

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[00:59:09] I had a very deep burn on the back of my hand, and there's still a mark from it, but all of the raising of it just went away in about two or three weeks of using the stuff. She's like, look, I'm charging the stuff with quantum signatures, and it has an effect. And I know the collagen in my skin is full of water, and I know this is possible, but how she does it isn't exactly clear to me.

[00:59:29] So do I really want to talk about this? Guys, if it works, maybe it's all powered by leprechauns. We haven't detected yet. I don't know why it works, but when I can see that it works in their studies and things like that, I'm willing to talk about it, even if some people say, Dave's not a scientist.

[00:59:46] And I'm like, if I'm not a scientist, then you're a, whatever. What's the most appropriate seventh grade-- you're a poopy head. If we're going to do name calling, let's do name calling properly because my seventh grade naming is strong. So there we go. It's not about that. It's about, are you curious about what I'm curious about, and are you going to learn, or are you going to say, this is how it is, and it cannot change? If so, you're not a scientist, you're in a religion.

[01:00:11] **Catherine:** And I would say the same thing about quantum physics and quantum biology. Some of it just doesn't make sense. And is that because we have the full picture and it doesn't make sense, or is it because we don't have the full picture? I would say the latter. And I'm okay with whatever comes next.

[01:00:30] I'm ready and excited for new ideas and not handcuffed to, quantum physics says this, and quantum tunneling-- it's an exploration, and that's what science should be. And that's what healthcare should be. And we shouldn't be relegated to our proverbial boxes because that's where it dies.

[01:00:54] **Dave:** Very, very well said. Dr. Catherine Clinton, thanks for doing the hard work of being at the cutting-edge and even teaching people what you know at the cutting-edge. I think it's fascinating. I've enjoyed our conversation so much. For listeners, if you enjoyed this episode, I would love it if you shared it with someone who's totally skeptical so that I can enjoy their troll comments on my social media.

[01:01:22] Because that's one of my greatest sources of joy, is when angry skeptics experience cognitive dissonance as a result of my work and then act out. And as I like to say when I open

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my talks, if anything I say triggers you, it's because you're walking around with a loaded gun. Maybe you should get a therapist and unload that, but not on me.

[01:01:45] Have a wonderful day. And I appreciate your time on the interview. Keep doing this stuff. And hopefully, some of our listeners will be intrigued by the class. And guys, relatively cheap. 47 bucks. drcatherineclinton.com. And all proceeds go to support work on basically quantum biology and water, which is super cool.

[01:02:06] And Upgrade Collective, our live studio audience, thank you for tuning in. Guys, if you'd ever like to listen in and actually be part of the chat thread during a podcast, which is super fun, go to our upgradecollective.com, join the collective. I will teach you cool stuff. See you all on the next episode.