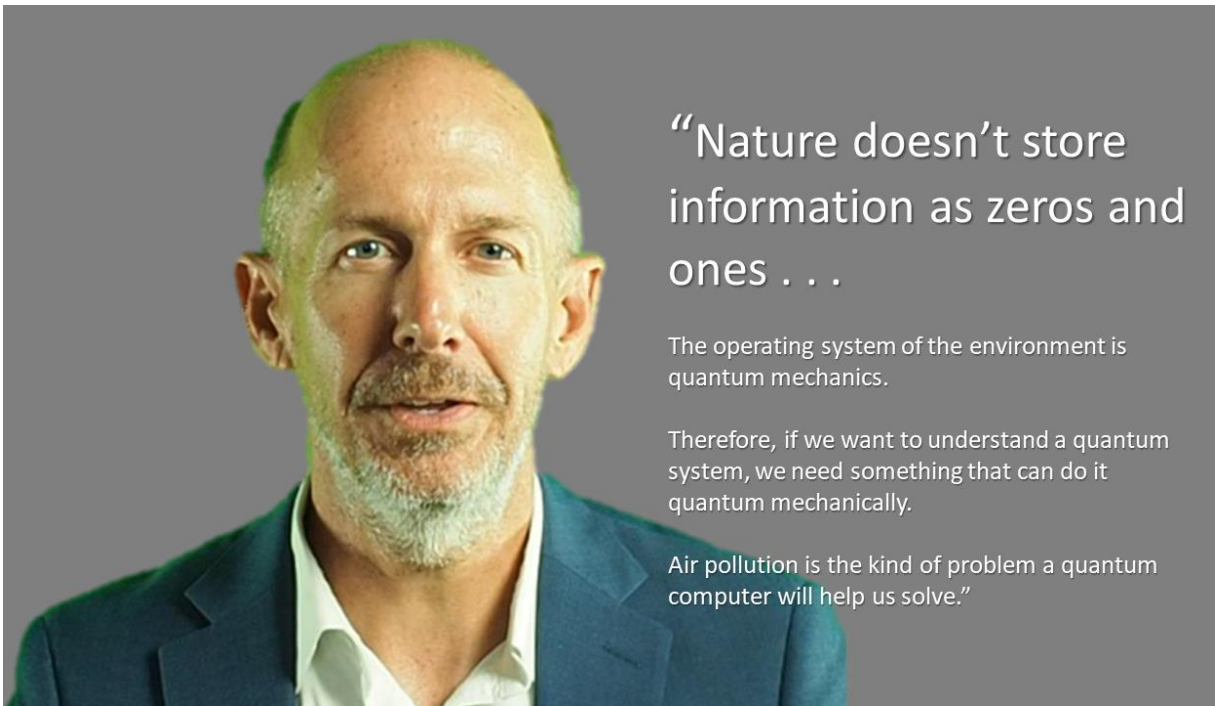
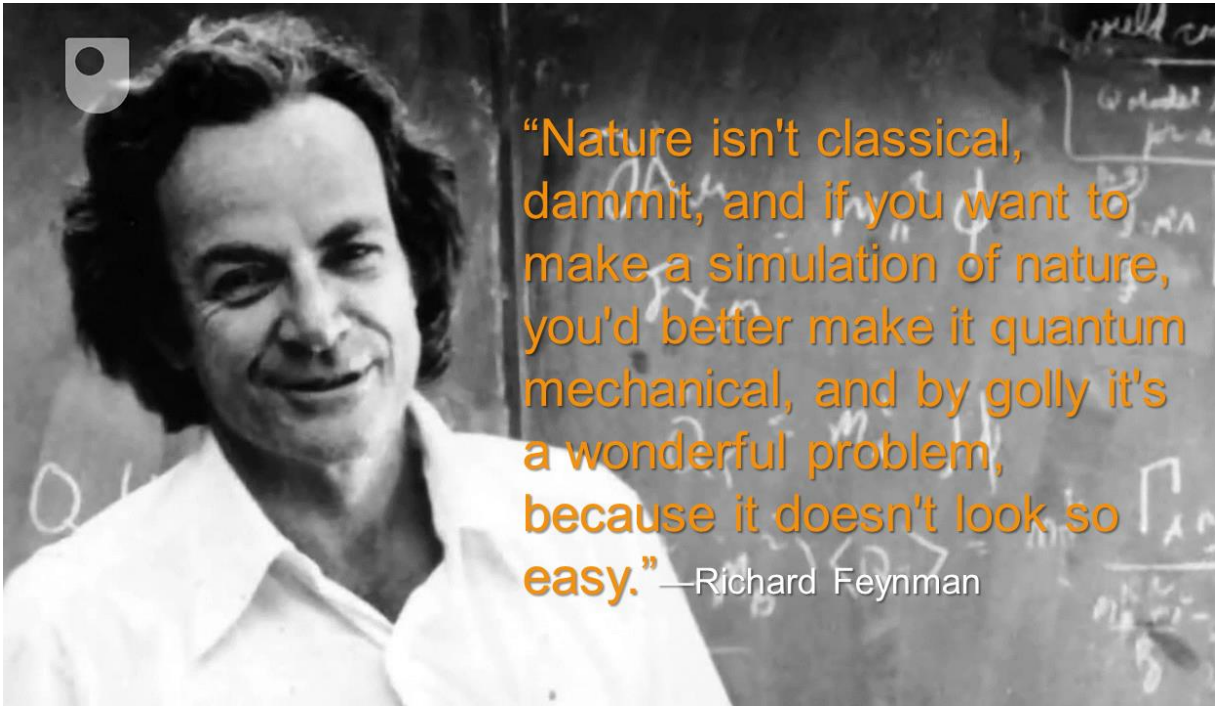


September 18, 2019

# Quantum Physics & Environmental Protection

**Recent developments in quantum mechanics will profoundly change how we approach environmental protection.**





“Nature isn't classical, dammit, and if you want to make a simulation of nature, you'd better make it quantum mechanical, and by golly it's a wonderful problem, because it doesn't look so easy.” —Richard Feynman

**First . . . why is an environmental attorney/entrepreneur talking about quantum physics?**

**Because it will dramatically alter our efforts to understand and protect the environment.**

**Second why is this important now Jed? . . . Niels Bohr observed the phenomena 100 years ago. It's not new.**

**Three reasons:**

- 1. It's only been in the last few years that quantum mechanics has been proven without a scientific doubt. Bohr and Einstein didn't have a way to prove the theory. Scientists performed the famous "double slit" experiment in the 1970's, but**

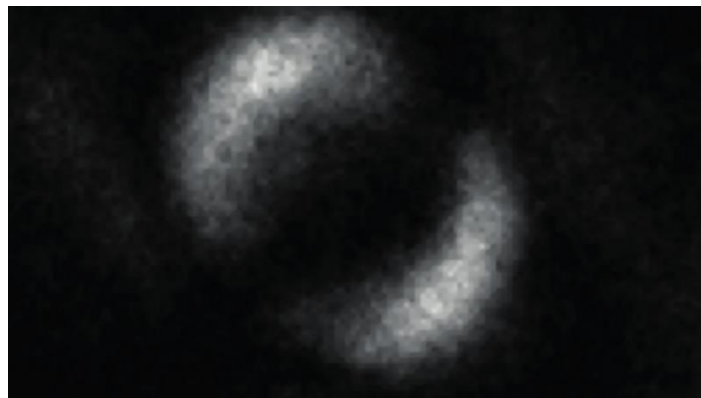
still doubt. Since then, experiment after experiment has confirmed the theory (in fact every experiment that's ever tested it). Experiments in just the last 12 months have been jaw-dropping. One of the latest experiments is the first picture ever of quantum entanglement taken just 3 months ago (see below).

2. **Quantum mechanics is being observed and demonstrated at the [macro level](#) now.** Most humans need to see things to believe them. Now we can see them.
3. **We are using quantum mechanics to build things.** Quantum physics is becoming more real to us because we are making more things with it. It's not just "spooky action at a distance" as Einstein called it. It

is a tangible effect that can be used to produce things. The fact that we can understand information through space and time without passing through space and time—though spooky—can be quite handy. We can use “spooky” to do things. One example of course is quantum computers (see below).



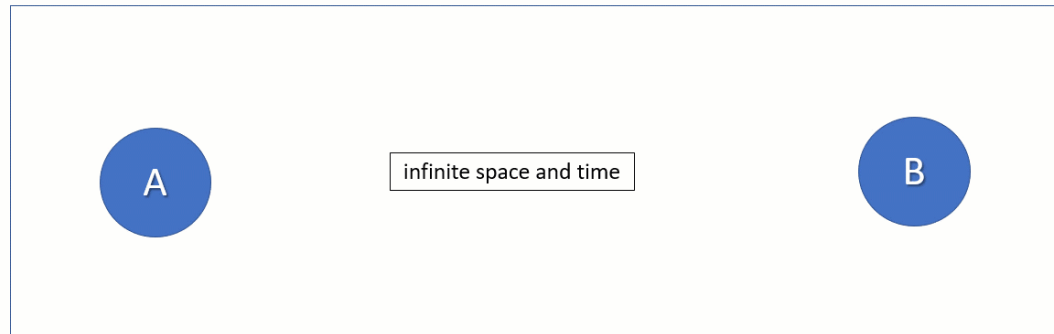
**And now for the reveal promised at the beginning of this email. . . the most disturbing and fascinating picture you will likely ever see in your lifetime---and it was taken just 3 months ago . . .**



(See [article](#) and [video](#))

**It's the first known image of quantum entanglement. Two particles connected over spacetime.**

# Quantum Entanglement



**A change to one particle results in a corresponding change to the other at the exact same time . . . regardless of distance.**

Particles can remain interconnected so that actions performed on one affect the other in predictable ways—even when separated by great distances. The phenomena so riled Albert Einstein he called it "spooky action at a distance." We now have hard-evidence of spooky action at a distance (you can also see the famous [double-slit experiment](#) here). We

don't know how quantum entanglement works yet. We just know it works.

“A basic understanding of the effects of quantum physics on the world around you will prove much more useful to you than knowing that the world is round.”

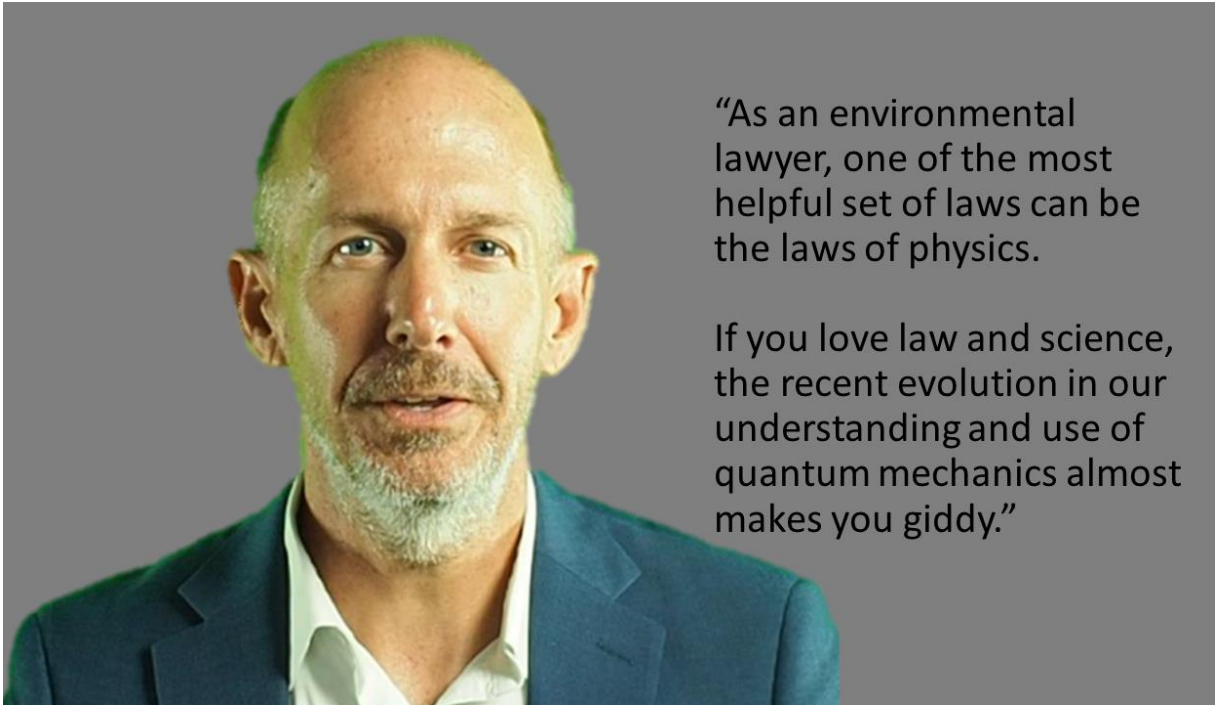


**Why is this important to you . . .  
and to environmental  
protection?**

Do we need to know that the world is round? No. Not for most of us in our everyday lives. But it profoundly affects us. Quantum physics will affect your understanding of the world even more.

Wrestle with quantum entanglement especially. It will take you a while. Watch the videos below---which are short and approachable. Don't give up. I don't understand it. Einstein didn't understand it. Bohr didn't understand it. No one understands it yet. But you don't need to understand it for some of its mystery and power to be revealed to you—and for you to see its evolutionary glide-path as we continue to harness it to build and understand more things

in the universe.



“As an environmental lawyer, one of the most helpful set of laws can be the laws of physics.

If you love law and science, the recent evolution in our understanding and use of quantum mechanics almost makes you giddy.”

**. . . and so why are recent developments in quantum physics important to environmental protection?**

As alluded to at the beginning of this article--- because we know now that the air we breathe around us is not a classical system or merely a classical system, but a quantum system. And as Richard Feynman famously and profoundly said 30 years ago: **“Nature isn't classical, dammit, and if you want to make a simulation of nature, you'd better make it quantum mechanical, and by golly it's a wonderful problem, because it doesn't look so easy.”** Nature doesn't store information as zeros and ones. The operating system of the environment is quantum mechanics. Therefore, if we want to simulate a quantum system, we need something that can do it quantum mechanically. The first quantum computer has now been built. Rumors are that Google will

overpass classical computing by the end of the year (see [Scientific American article](#)).



**Why is quantum physics,  
quantum computing, and  
artificial intelligence important to  
us at Ceres A.I.?**

Ceres A.I. is preparing data and platforms as quantum and A.I. technologies continue to advance. Ceres A.I. is building incrementally toward a cyber-physical system to understand and manage environmental laws, sources, and receptors contemporaneously. This will require quantum simulation. As Feynman again pointed out, a quantum system is needed to understand a quantum system.

**Please take at least 6 minutes to understand quantum physics if you haven't already.**

I would start with the NASA video below since it talks about a tangible quantum application

(quantum computers). Below are links. Each of us is capable of understanding the basics. Do not be intimidated. Take solace. Nobody again fully understands it yet. As Feynman also said, "If you think you understand quantum mechanics, you don't understand quantum mechanics." But knowing a bit more about it's effects on the matter around you will profoundly affect you, and in turn, how you can affect the world.



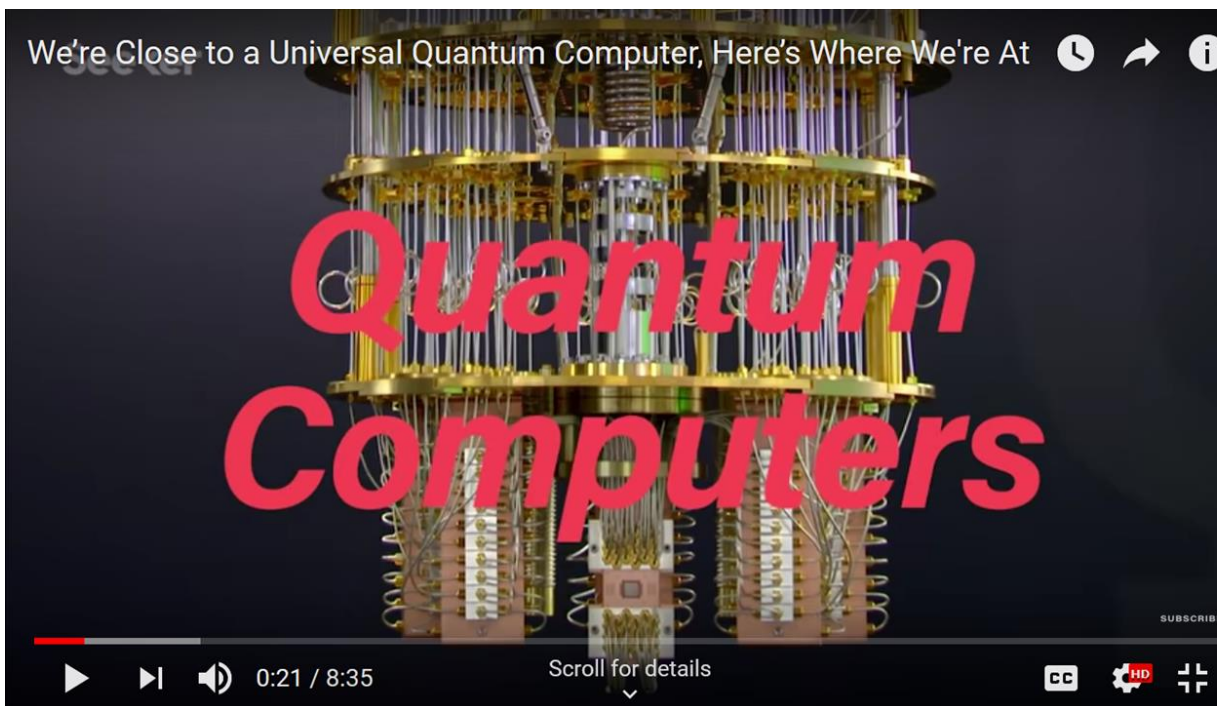
- If you want a quick 6 minute introduction to quantum potential-- watch this NASA/Google video: [NASA/Google video](#)



- Watch this NSF/NOVA video:



- A great introduction to quantum computing and how close we are to exceeding classical computing power:





For information on Ceres Environmental A.I, see [www.ceres100.com](http://www.ceres100.com)



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