

# Evolution 2.0 Prize

Confidential Supporter & Investor Update  
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## A Planet Perry Member, a College Professor and a Jewish Rabbi board an Airplane...

I just gave an Evolution 2.0 talk at Penn State. That story begins in 1989 in my toughest semester of college. It was the spring of my sophomore year, six months before I got married. My classes were a *bitch* and the hardest class was EE306 – Electromagnetic Fields and Waves.

EE306 is a stir fry of physics and 3-D calculus – with not only electrical but magnetic fields simultaneously in three dimensions. Widely reputed to be the toughest class in the entire Electrical Engineering department. My professor was a short Indian guy named Ram Narayanan. Also reputed to be tough. He did not disappoint.

As we exited our first test of the semester, my classmate Pat O'Brien said to me, "I'm going home to lick my wounds." When Dr. Narayanan handed our tests back, the average was 42. He says, "You think I'm gonna grade this on the curve? Ha! You guys just think that in the land of the blind, the man with one eye gets to be king. You're wrong. I'll flunk *all* of you if you!" I slid by with a C+. The next semester after that, I took EE308, the sequel, also from Dr. Narayanan. I got an A.

Later, after I got fired from my job at W.W. Grainger for sending a rogue fax [story at <https://www.perrymarshall.com/27131/>] then got fired two *more* times. The EE department at school proved a more hospitable place of employment, so I worked for Dr. Narayanan for a semester as a research assistant in the Center for Electro-Optics. Dr. Narayanan and I became friends. Like most mean guys, I found his bark to be bigger than his bite. He was an eminently likable guy with very tough standards.

I graduated and moved to Chicago. Didn't see or hear from Dr. Narayanan for 28 years. But then a year ago, I got a phone call from him out of the blue.

He had been on a flight talking to someone (I don't know who) who was a Planet Perry member. (I'm pretty sure a Jewish Rabbi must surely have been involved, but no one has come forward with details or jokes about their conversation.) Dr. Narayanan is now a prof at Penn State University in State College PA, which is one of the top research schools in the country. Somewhere in the conversation he mentioned that he used to teach in the EE department at the University of Nebraska.

The Planet Perry member says, "I know a guy, who was an Electrical Engineer from Nebraska. That's Perry." And then they get into this whole conversation about Perry and my Google books and all the rest. So Dr. Narayanan calls. We chat awhile, and he says, "Hey, if you ever want to come to Penn State and give a career talk to my students, my wife will cook you Indian food."

I said, "How about two talks instead of one? I'll give a career talk *and* an evolution talk, and I'll bring my video crew."



The reason I said that was, when I announced the Evolution 2.0 Prize at Arizona State University in 2017, they wouldn't let me bring a video crew. Two weeks before the event, I found out that if you are an outside speaker, you have to fill out a bevy of forms and run through a vast bureaucratic maze to get approvals. Universities are very touchy about their brands, their logos, and people hijacking their credibility for commercial purposes.

“But don't worry,” they said. “We have our own video crew and we'll give you a copy of your presentation afterwards. You can use that.” I canceled my own video crew and gave the talk. We ran a Facebook Live Stream from a cell phone and we recorded that too. But when ASU sent my video, it was unusable. The audio was a unintelligible and the video was far from great. All I have is the 640x480 Facebook live video, from what was an otherwise historic presentation.

In 2019 you need hi-def video shot at credible places. I was itching for a do-over. A trip to Penn State would be perfect. Dr. Narayanan thought all that sounded fine. We submitted the request. A few weeks went by.

Then I get an email from Dr. Narayanan. “The Engineering department at Penn State is pushing back. They say this is a biology talk not an EE talk. Sorry, we can't host this.” I shot back: “Oh yes this IS an Electrical Engineering talk. Code is code is *code*! The specification for my \$5 million prize was lifted right out of an EE communications textbook! All that digital code and Claude Shannon stuff is standard EE straight down the fairway.” I send him copies of Evolution 2.0 and all the papers he might need to defend his position.

A few more weeks go by, and he gets approval. But the university PR department still has to approve me bringing my video crew. We submit that request... then crickets. *Six months later*, we get the thumbs up. University officials say, “You can shoot video here but you can't use your logo in any of your shots.” So in November 2018 I gave two talks – a career talk and an evolution talk – and you'll easily find the evolution talk at [youtube.com/evolution2](https://youtube.com/evolution2).

**Your** donations, dear reader, funded our video crew, their travel expenses and professional editing. (I paid my own travel expenses, and Zander my 14 year old came with me.) Anyway, it's a sharp looking video. We had a terrific dinner with Dr. Narayanan and his wife at their lovely home. We spent hours discussing his research and our families and history.

And at this point now, I've given evolution talks at Arizona State University, University of Notre Dame, and Penn State. My evolution book is endorsed by people from Oxford and UCLA and my judging panel includes the leading geneticist at Harvard, who also teaches at MIT.

All this might not seem like such a big deal. People give talks at universities all the time, don't they? People get college professors on their panels all the time, right? But please allow me to give you a wider perspective on this. This is the most contentious topic in all forms of research. People in evolutionary biology live in fear.

There has been a loooooong line of people for literally 100 years who have been dissatisfied about how the “where we come from” question is handled in scientific research. *And the road I'm on is paved with their dead bodies.*

I have gotten farther than *any* of them. It's a miracle I'm still here. But Evolution 2.0 has passed the point where anyone can legitimately condemn it. In fact, other than my debate with skeptic PZ Myers on the Unbelievable



show, and a flurry of his cranky blog posts, there is almost no substantial or credible criticism of the book online.

There are definite reasons for the success of this project. I believe one reason I've succeeded where others have failed is *I always put my cards on the table*. There is never any question as to my motivations or the history of this question in my life. Whenever I give talks, I plainly tell my story of Bryan in China and our bus ride and our argument about the hand at the end of my arm. Then when I get to the science, I clearly delineate what are science questions and what are religious questions. I don't try to push science any further than it can be pushed. I don't try to prove what science can't prove.

I *assiduously* document all of my assertions and back them up with verifiable research. Everyone knows that if they get in a blog war with me they're gonna get a bazooka. And nobody's sitting there wondering what Perry's agenda is. Everybody knows Perry is a Christian, but what they soon figure out is Perry is fighting Christian fundamentalism *and* secular fundamentalism. Perry is fighting for the truth, as best he can apprehend it. There is nothing about my approach that is incompatible with empirical science.

Perry allows people to draw their own conclusions. (I have found that trying to force people to conclusions on such matters *simply does not work anyway*.)

Many others have tried to effect change without success. The creationists are simply not taken seriously at all; the Intelligent Design movement (headed by the Discovery Institute in Seattle) has made lots of waves yet is not taken seriously by most mainstream scientists. I think there are two reasons for this: 1) their intelligent design hypothesis is not framed in such a way that it is a solvable scientific problem; 2) they never quite lay their cards on the table.

They are more religiously motivated than they admit to in public. And they've politicized the issue far more than they should. I am sympathetic to some of their views but reject others... but I think one reason I've gotten farther than they have is that I've been extremely forthright about my story and they have not. My program is ruthlessly empirical but theirs lacks a clear scientific path forward.

A scientist who has taken a very different approach to his dissatisfaction with the evolution status quo is John Torday. He is Professor of Pediatrics and Obstetrics/Gynecology at the Evolutionary Medicine Program at UCLA. He's Director of the Perinatal Research Training Program, where he has researched the effects of second-hand smoke on children for the last 30 years.

Oddly, second hand smoke turns out to be an intensely *evolutionary* question.

John found that there are 300 effects of second hand smoke on children. And you would *never* guess which effect tops the list: It is *epigenetic changes inherited from a smoking grandmother*. Epigenetics is a high-speed "graying out of genes" that alters your body's function without editing the DNA itself. It happens in response to what's going on around you.

The woman smokes, so her body massively switches genes on and off to deal with the poison. These changes are passed to daughter, then further amplified in the granddaughter. Please notice that the granddaughter need not have even *met* her smoking grandmother, or inhaled any smoke. She inherited those changes through the evolutionary adaptive mechanism of epigenetics!



Please pay attention. Torday is saying that *the worst effect of second-hand smoke is from the mother's own genetic evolutionary adaptation*. It is the 200-year-old idea from Jean-Baptiste Lamarck that learned traits can be passed to offspring... an idea that got a sound thrashing 100 years ago... laughed out of the academy. For a century it was heresy, but as it turns out, it's a major lever in basic everyday health.

Epigenetics is why all creatures on earth are so apparently customized to their environment, wherever they live – because real-time adaptations can be passed to children immediately. Hawaii has 10,000 species of flies. 9700 of them are unique to Hawaii. It's not because 'poof' they were created like that and placed there. It's because epigenetic and other changes are constantly generating diversity to fill ecological niches. *This is exactly what marketers and entrepreneurs do*. The path is haphazard, always a best guess, but over time it gets dialed in with stunning precision.

John Torday is an evolution genius. I met with him after last year's January Roundtable meeting in Redondo Beach, California. We spent an afternoon at a coffee bar discussing his years of research... and the desperate crying need for a superior evolution model. This is what he has been working on for most of his career.

## The Extraordinary “Coincidence” That Makes Eclipses Possible

Let me tell you a side story that tweaked my views in an interesting way. Guillermo Gonzalez was an astronomer at Iowa State University with a sound reputation, strong research and respectable publication track record when he wrote a book called *The Privileged Planet* in 2004. His book begins with his trip to Asia to view a solar eclipse. During an eclipse, you can make observations about the sun's corona (because the main part of the sun is blocked by the moon) that you cannot make at *any* other time. Those measurements, in turn, give us important clues about stars and galaxies.

Dr. Gonzalez realized that an eclipse where such measurements are possible is only possible *because the sun and moon are the EXACT same size in the sky*. (Which means that the moon has to be a very particular distance from the earth in relation to its own size and the size of the sun for this coincidence to happen.)

He further realized that if you wish to look at the entire universe from a telescope, then the Milky Way is a great galaxy to live in. We are also extremely fortunate that we live on a spiral arm of the Milky Way galaxy out on its edge, rather than in the dense center. Otherwise we would never be able to see past the stars in our own galaxy and view other stars in the rest of the universe.

There's another piece too, which is called “fine tuning”: In your kitchen cabinet, you've probably got a spray bottle with an adjustable nozzle. If you twist the nozzle one way, it sprays a fine mist into the air. You twist the nozzle the other way, it squirts a jet of water in a straight line.

You turn that nozzle to the exact position you want so you can wash a mirror, clean up a spill, or whatever. If the universe had expanded a little faster, the matter would have sprayed out into space like fine mist from a water bottle – so fast, a gazillion particles of dust would speed into infinity and never even form a single star.

If the universe had expanded just a little slower, matter would have dribbled out like big drops of water, then collapsed back where it came from by the force of gravity.





I do believe in miracles, but I greatly prefer miracles *that you can observe right now* to miracles that might have happened a million years ago. Because no one was there to see a miracle that happened a million years ago! (If you want to go down my religious miracles rabbit hole, see [www.coffeehousetheology.com/miracles](http://www.coffeehousetheology.com/miracles).) One of the greatest miracles of all time is your own immune system engineering resistance to bacteria... or bacteria engineering resistance to antibiotics.

*Studying such things is how humans learn to think and reason and use resources and build businesses and build cultures.* Our “discoverable universe” has very long tentacles.

## **Are we gonna turn out super-smart High-IQ Designer Babies with gene editing?**

An article in MIT Technology Review hits the nail on the head. The answer is NO. Interactions between genes are far too complex. There is not remotely any such thing as an “intelligence gene” or a “network of intelligence genes” that one could accurately identify. Let alone edit with precision and foresight, such that you could generate a predictable and reliable result.

The title of the article is, “We won’t use CRISPR to make super-smart babies—but only because we can’t.” Increasing your baby’s IQ by editing a few genes could be like making you run faster by giving you heart surgery. Imagine a surgeon telling a 23-year-old athlete they’re going to add bypass arteries to increase the flow of oxygen between his otherwise healthy heart and lungs – and the story might sound believable – but any actual process of increasing your cardiovascular capacity is far more “organic” than installing fatter tubes.

What *can* you do with gene editing right now? There are many genetic diseases caused by relatively simple, identifiable copying errors. The errors are confined to well-known locations in the genome. Examples: cystic fibrosis, sickle cell disease, Fragile X syndrome, muscular dystrophy, some kinds of dwarfism, and Huntington disease.

Cystic fibrosis, for example, is caused by a single copying error of ONE codon (group of three letters in DNA) and happens any time both parents’ DNA have the same copying error in the same place. In theory, relatively easy to fix. In practice, probably a good deal harder than you might suppose. But solvable.

There are *lots* of “shoot fish in a barrel” (relatively speaking) genetic problems that can and should be solved *long* before we attempt anything remotely resembling “engineering better humans.” I estimate we understand 5% of evolution and 10% of how the genome actually works – and we’ve been hacking away at both these problems for a *long* time. These are exponentially difficult problems.

Popular media science fiction runs *far* ahead of our true capabilities. This is true in genetic engineering and it’s also true in AI. I interviewed Kai-Fu Lee about Artificial Intelligence. (Watch for it; subscribe on iTunes or [www.evo2.org/the-podcast](http://www.evo2.org/the-podcast).) He’s former president of Google China; he runs an AI Venture Capital firm with \$1.7 billion in capital, and is author of the new title “AI Superpowers: China, Silicon Valley, and the New World Order.”

I asked him whether Elon Musk’s predictions about AI making human beings obsolete are true. He laughed. He said “90% of the actual AI researchers I know think that’s totally ridiculous.” Meanwhile these distract us from



the actual problems. **The actual problem with AI is that every AI program in existence was created by or is controlled by a human who has motives.** AI has no will of its own. The humans do.

Google or Facebook or Amazon or LinkedIn or Instagram or Twitter can tweak an algorithm 5% and 20 million voices are suddenly never heard, or are heard but by 100 million fewer people... *and nobody knows for certain that it happened. No one is accountable. And only the owners of those platforms have the ability to program those biases into the machine.*

You cannot know the extent to which you or others may be censored. 24/7/365. (Though I predict that some equivalent of WikiLeaks will sooner or later break out, where insiders from Google, Facebook etc. blow the whistle on deliberate social engineering on a mass scale. Watch for it.)

Similarly, returning to gene editing, there's no central authority or database that transparently reveals what all the CRISPR guys are doing out there and even if there was, 99.9% of people could never understand it anyway. So our technological capacity runs *far* ahead of our ability to manage, legislate or communicate it.

**We can legislate all day long and I'm unclear how helpful this will be anyway – but it will be far more productive if people have an innate confidence in and respect and reverence for nature itself.** This is a key goal of Evolution 2.0. The disease of humans thinking we're smarter than nature is rampant. I talk to people all the time who seem to take completely for granted the fact that you can stub your toe, it can bleed, and a week later it's healed and you can't even tell anything ever happened in the first place.

Cars don't do that. Airplanes don't. Computers don't. Soap dispensers don't. Apps in the app store get better all the time because millions of programmers are busy writing code. Bacteria get better all the time because they're rewriting *their own* code. What do they know that we don't?

**If and when we find out, it will be one of the most momentous discoveries ever.** As big as the splitting of the atom or the invention of the transistor. Evolution 2.0 is either bigger than Google or more enduring than Aristotle. If we solve it, it will be one of the biggest scientific and technical discoveries of all time.

If we don't solve it, then 500 years from now it will still stand as one of the great unsolved mysteries of the universe, just like problems in mathematics that have baffled the greatest minds for hundreds of years.

We need to know two things: 1) Where does code come from? And 2) How do cells 'know' how to reprogram that code? They're not just editing stuff willy-nilly. Paul Davies the physicist who invited me to ASU, in an email to me, said:

I think I agree with most of what you say in terms of the downplaying of non-random mutations and epigenetics. My recent foray into cancer biology has convinced me that cancer is a pre-programmed response to stress, not the result of random mutational damage which is the orthodox explanation.

Much of the cancer response is epigenetic, but I have long been open to the idea, picked up from Jim Shapiro, of Natural Genetic Engineering, in cancer. So I like the possibility of read-write genomes and aspects of Lamarckism in evolution.



In chapter 26 of *Evolution 2.0* I announce that we'll never solve cancer until we switch to a more accurate model of evolution. Cancer is evolution run amok. Paul Davies' latest research supports this. This is a prime opportunity to solve some very fundamental problems. This is not a ten-year project. This is a five-hundred-year mission and calling.

## Shark Tank for Biological Ideas?

All the Evolution 2.0 backers agree the probability of solving this problem *soon* is low. You never know; someone could solve it tomorrow; but I'd say we have 10% chance of solving this in my lifetime. It's one of the hardest problems.

**All of my investors agree that what we really have is 'Shark Tank for biological ideas' because people are already coming out of the woodwork with interesting proposals.**

### “DID ANYONE WIN THE EVOLUTION PRIZE? YES OR NO?”

That's it. Black and white. This prize is the ultimate Proposition Simplifier. You may or may not understand information theory or Claude Shannon or bioinformatics. You may not even know exactly how DNA works or what the genetic code is. **But every six-year-old can understand: *Did anybody claim the dinero, or not?***

If we crack this, the investors will make a lot of money. But for the time being, this is solidly a nonprofit project that people need to know about and understand. So....

**Thank You!** ...To the many people and friends who have contributed funds to the Evolution 2.0 501(c)3 nonprofit organization. Last year I reached a point where I had to admit to myself: *Dude, you can't do this thing all by yourself.* If it's going to take hold, if it's gonna fly, it's gonna have to be bigger than Perry. This means giving up some autonomy.

We entrepreneurs fiercely defend our autonomy... but most of us reach a crisis when our creations outgrow them. This needs volunteers, it needs donors, it needs the systems of a full-tilt nonprofit organization in order to achieve its promise. This is way to important to be run like some guy's nerdy avocation.

OK, so I bit the bullet... We are cranking up advertising, we're shooting video... you should definitely listen to the Evolution 2.0 Podcast (it's on all the major platforms – iTunes, Stitcher, etc.) and you should also subscribe to the YouTube channel – [youtube.com/evolution2](https://youtube.com/evolution2). We also have a project manager, Sam Bart from Pennsylvania, who I met at my talk at Penn State.

You have been immensely supportive. If you wish to donate – or become a backer of the prize – or volunteer your business, marketing, video or copywriting skills, email [evolution@perrymarshall.com](mailto:evolution@perrymarshall.com). Subscribe to the Evolution 2.0 podcast... watch the movie *Symbiotic Earth* (available on Amazon in DVD or online streaming) and relish the mystery of it all.

Perry Marshall





