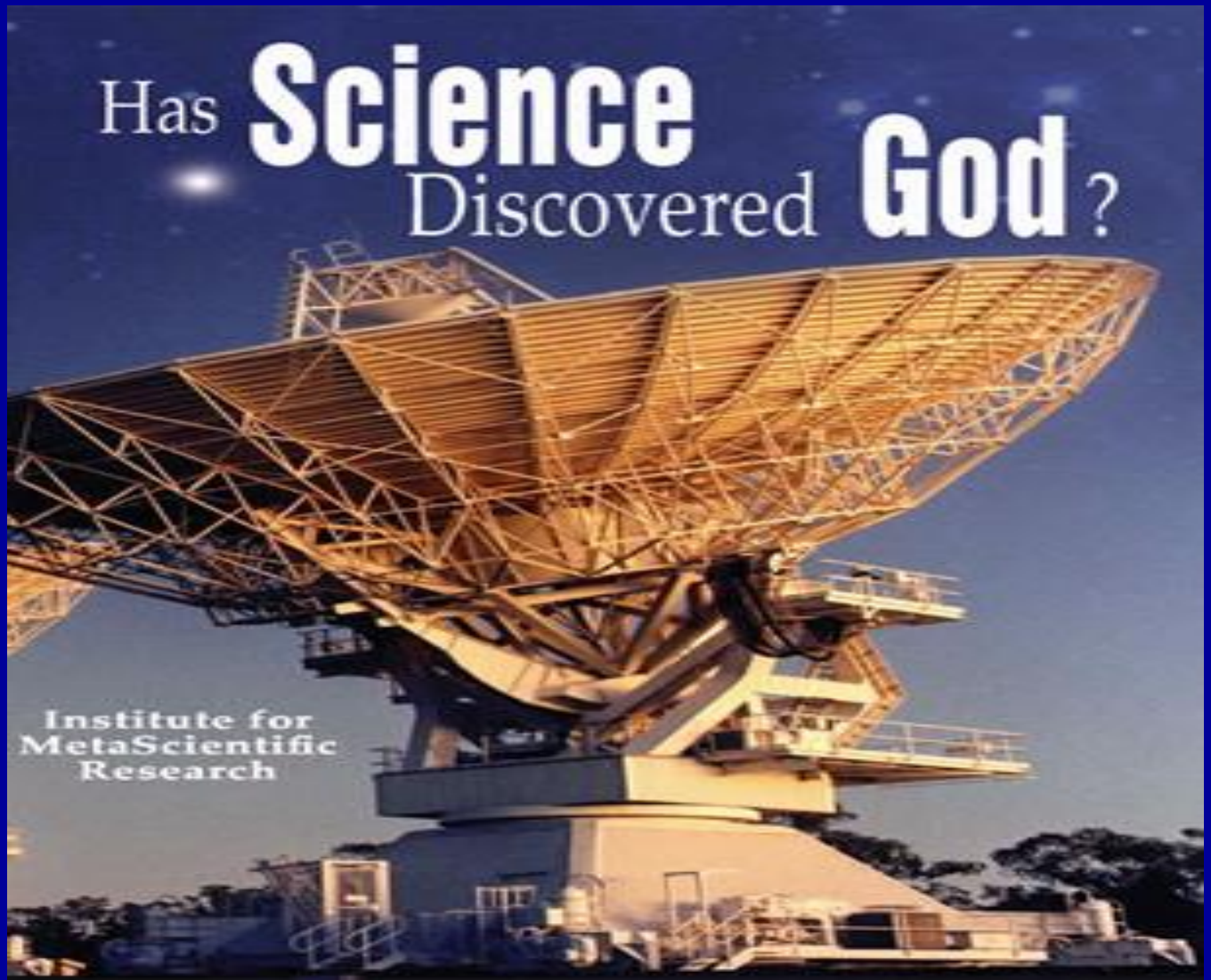
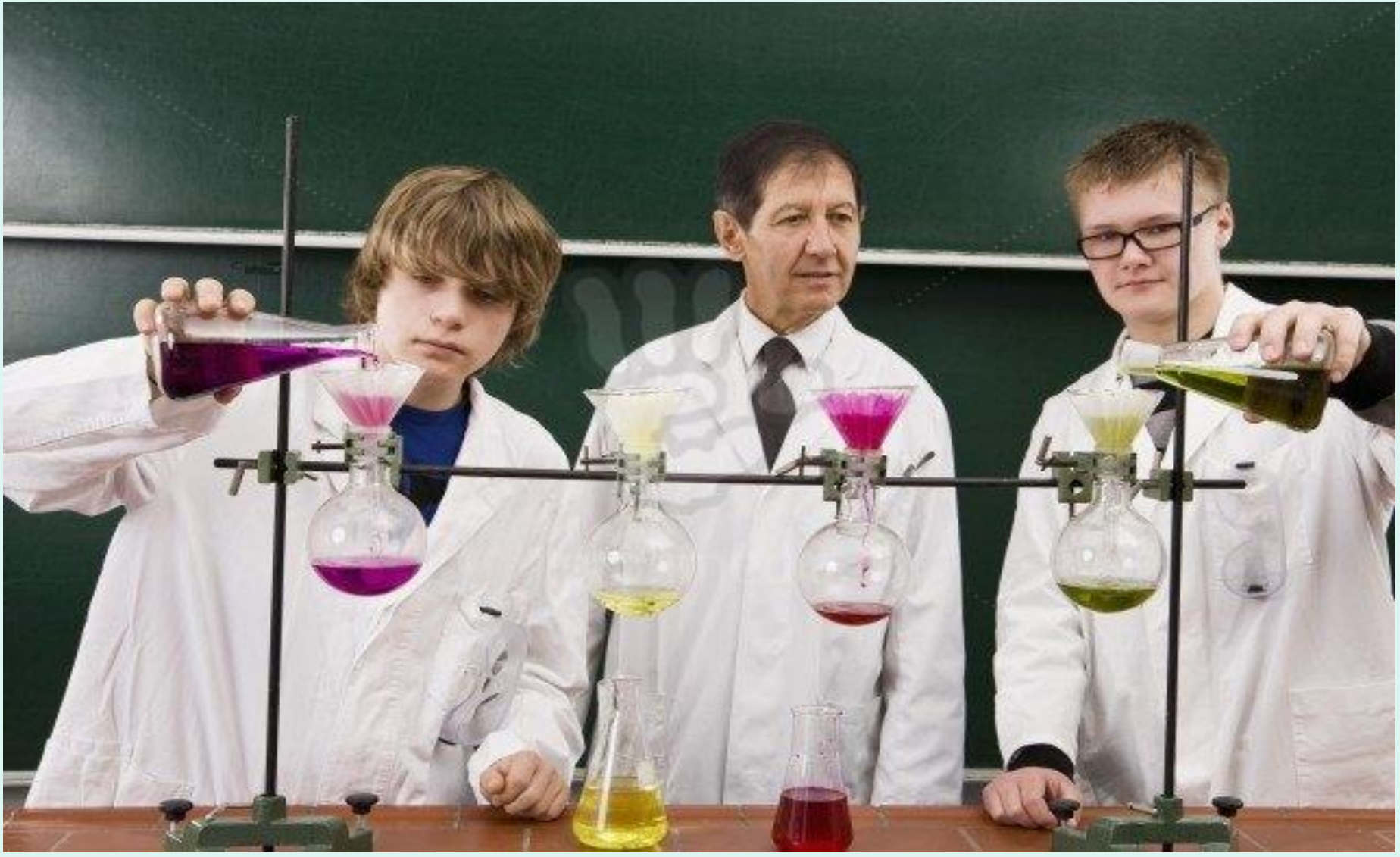
EXPLORING THE SCIENTIFIC EVIDENCE FOR THE EXISTENCE OF GOD

TODAY, WE ARE GOING TO LOOK AT SCIENTIFIC EVIDENCE THAT POINTS DIRECTLY TOWARDS GOD



By "science", we mean the study of the structure and behavior of the natural world through observation and experimentation



Without a doubt, scientific advances have improved our lives in every area, allowing us to relax and live with unprecedented comfort

And allowing us to travel

with every convenience at our fingertips

Thanks to advances in science and technology,

we now have household and personal conveniences beyond the wildest fantasies of past generations

And we also have the best medical and dental care in the history of mankind

So the problem is not science. Science by itself is a good thing, something that has improved our lives, a gift that we should be thanking God for every day

The problem is when we don't thank the creator, when we think that our ability to understand creation (i.e., our "science") means that we don't need a creator anymore to explain the creation

This tension has been growing for hundred of years, as we have been increasingly told that science and God are in conflict, and that you can't believe in both

TO THE POINT THAT OUR CULTURE NOW TELLS US SCIENCE ACTUALLY PROVES THAT GOD DOES NOT EXIST

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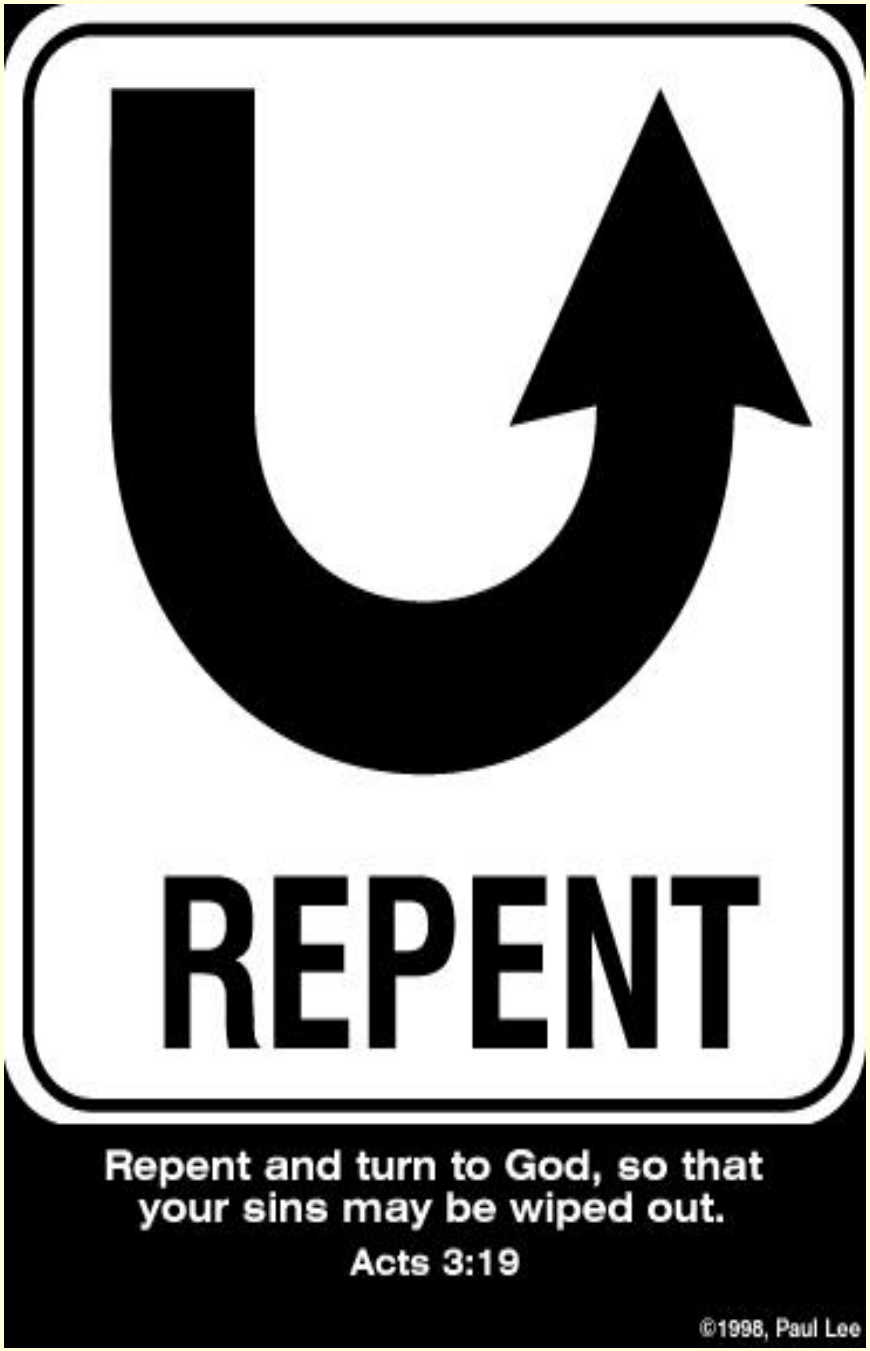
With many educated people even boldly proclaiming that God is dead

And others going so far as to openly mock and attack those who still believe in God as being simple minded and maybe even fools

ADULTS WITH IMAGINARY FRIENDS ARE STUPID

But what if everyone who says that is wrong, what if it is actually the opposite?



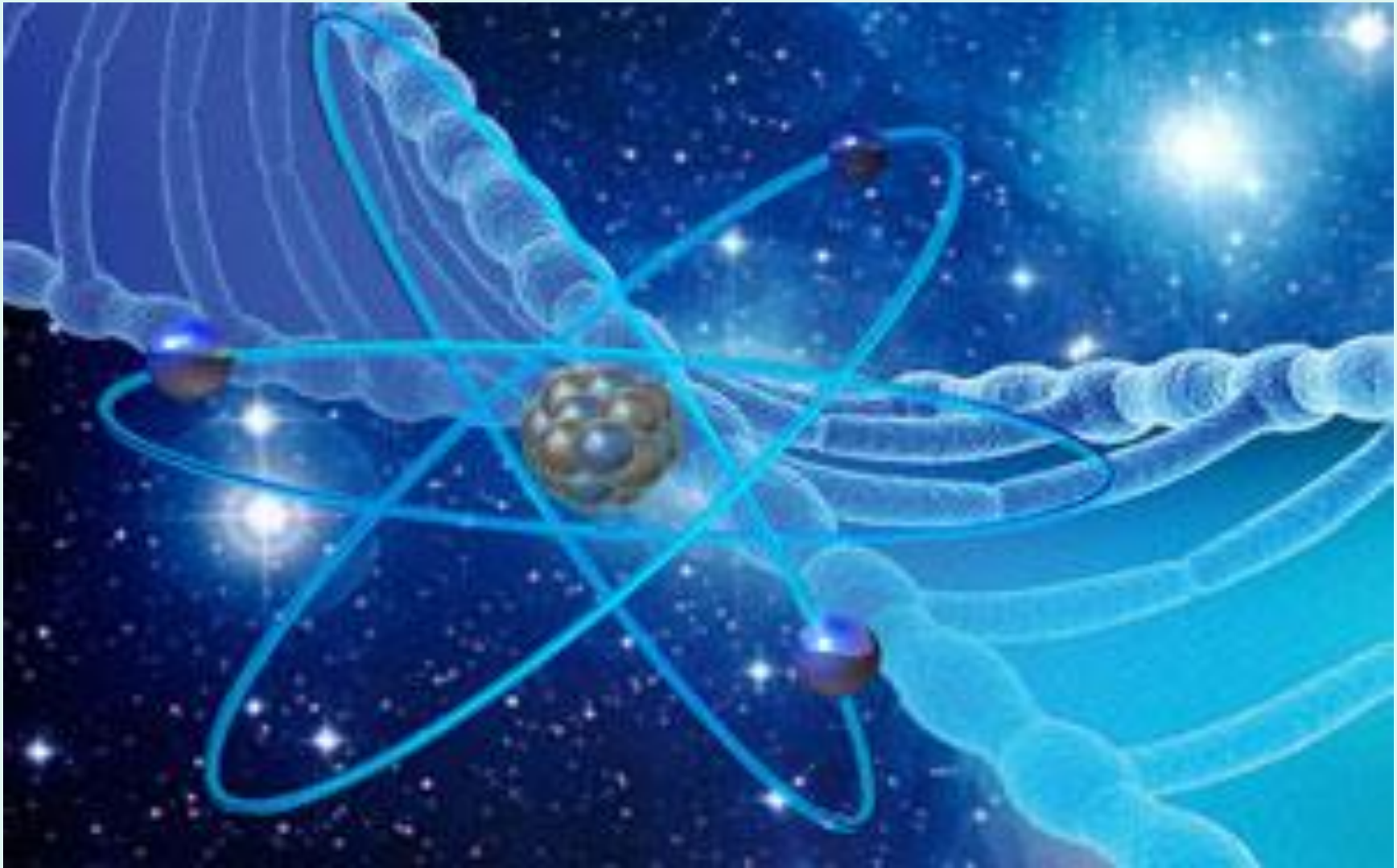
What if the culture needs to **change directions** and instead of claiming science has disproven God, what if we can use science to actually prove that God exists

What if we were to put science to work and got the biggest telescope we can find

To peer more closely into the largest objects in the universe

And what if we could sit down with the most powerful electron microscope in the world

To see what science can tell us about the smallest objects in the universe, all the way down to molecules and atoms

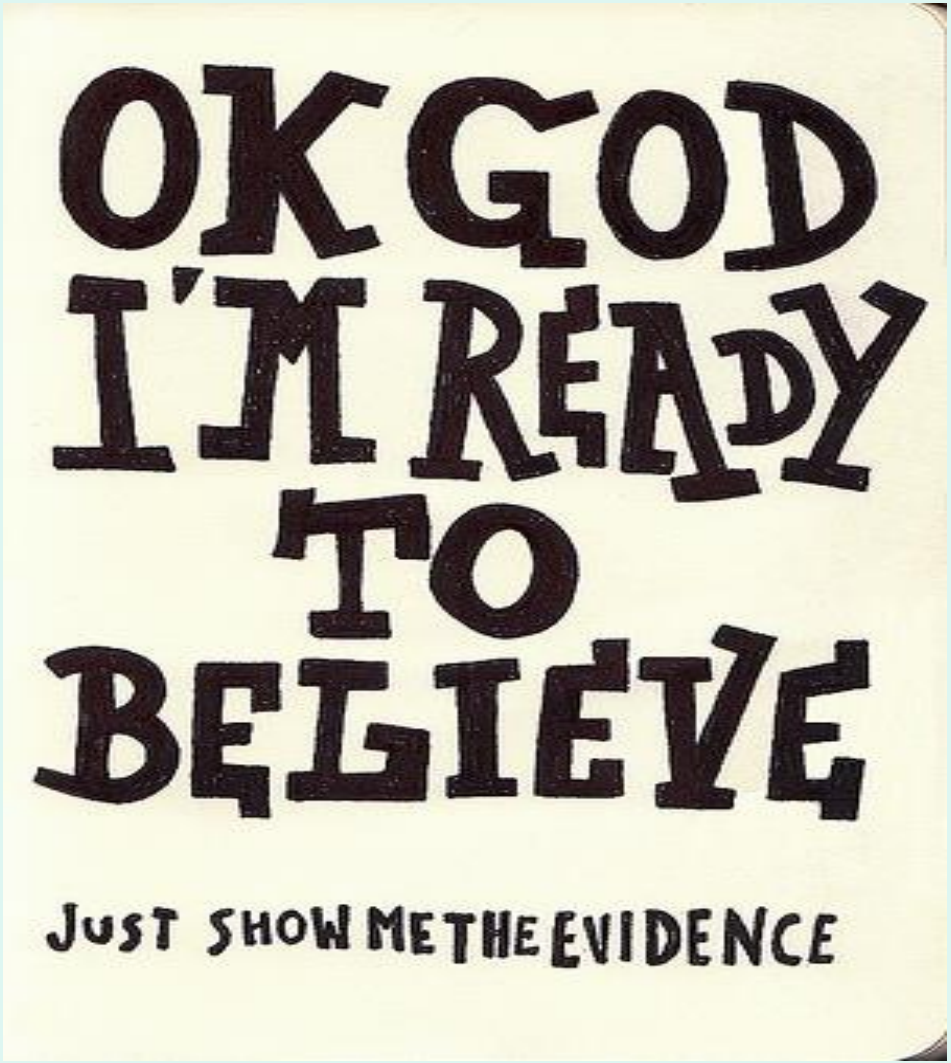


What if we looked at what science can tell us about the complexity of life on our planet

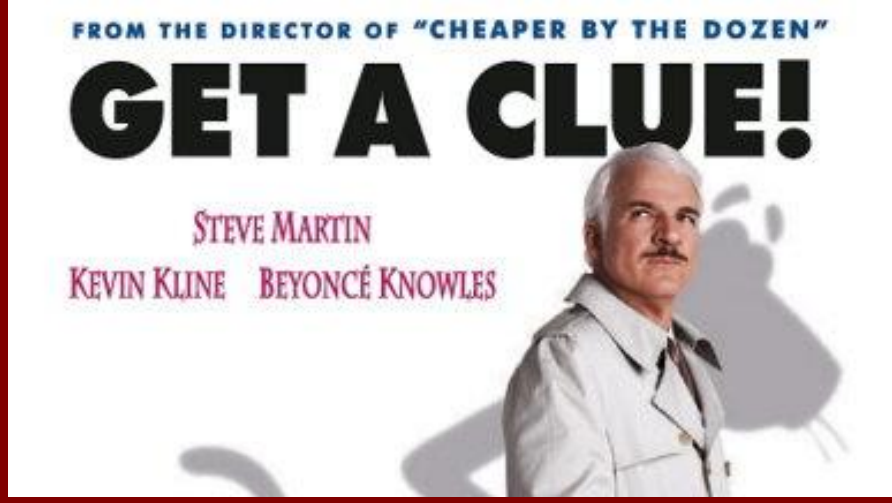
In fact, what if we did nothing more than just opened our eyes to the complexity of what surrounds us every day

ONLY TO SEE GOD STARING RIGHT BACK AT US!

There are a lot of people out there who want to believe in God, but just feel like there isn't any reason to



They want evidence for the existence of God, so let's investigate these five areas of science to see what (or who) they point us towards:



1. **The evidence of cosmology** (the universe had a beginning in the Big Bang, meaning that someone must have caused the beginning)

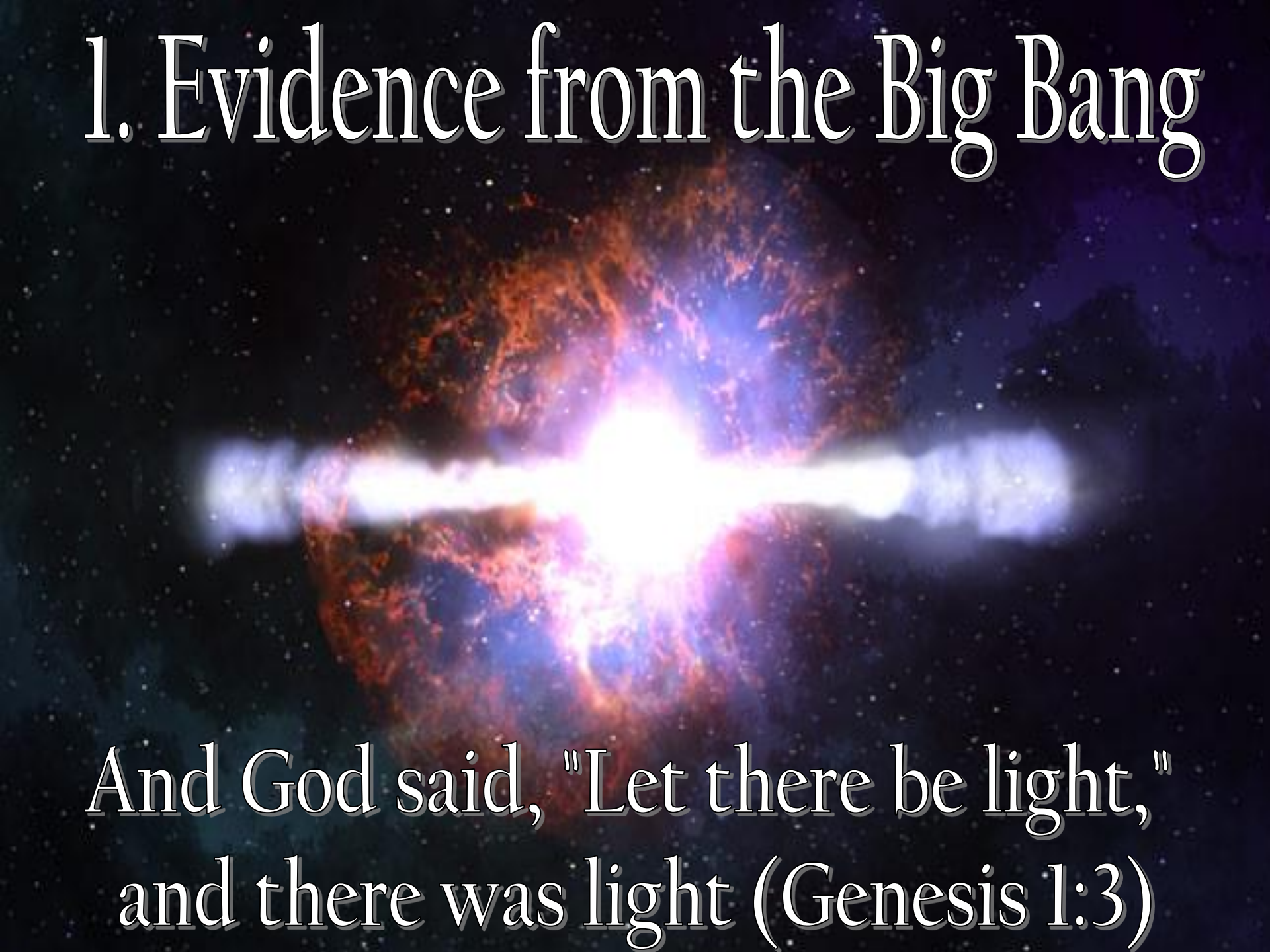
2. **The evidence of physics** (the physical laws of the universe have been fine-tuned to an incredible degree for the universe and for life to exist)

3. **The evidence of astronomy** (our solar system and planet have been designed and fine tuned to be a precisely-balanced habitat for life)

4. **The evidence of biology** (there is design evident in the complexity of all living organisms on our planet, especially humans)

5. **The evidence of biological information** (only an intelligent agent can be responsible for the information content of DNA and, therefore, for life)

1. Evidence from the Big Bang



And God said, "Let there be light,"
and there was light (Genesis 1:3)

The Big Bang – the Evidence from Cosmosology:

- Cosmology is the scientific study of the origin and development of the universe

- There is a very strong consensus among modern cosmologists that the universe had a definite beginning (i.e., the universe has **not** always existed) that occurred about **13.8 billion** years ago

- The scientific evidence for the Big Bang includes Albert Einstein's General Theory of Relativity (the most accurately proven theory in all of physics)

- the scientific evidence goes back to just **0.00000000000000000000000000000000000001** seconds after the Big Bang

The Big Bang (con't):

- The scientific evidence for the Big Bang is so conclusive that scientists in this area no longer debate whether it happened

- Rather, they work on theories to try to explain how it happened (mostly trying to find theories to explain how the Big Bang could have happened without the involvement of a creator)

- Some scientists (like Stephen Hawking) claim that gravity caused the universe

- But scientists are in agreement that space, time, matter and energy all began with the Big Bang

The Big Bang (con't):

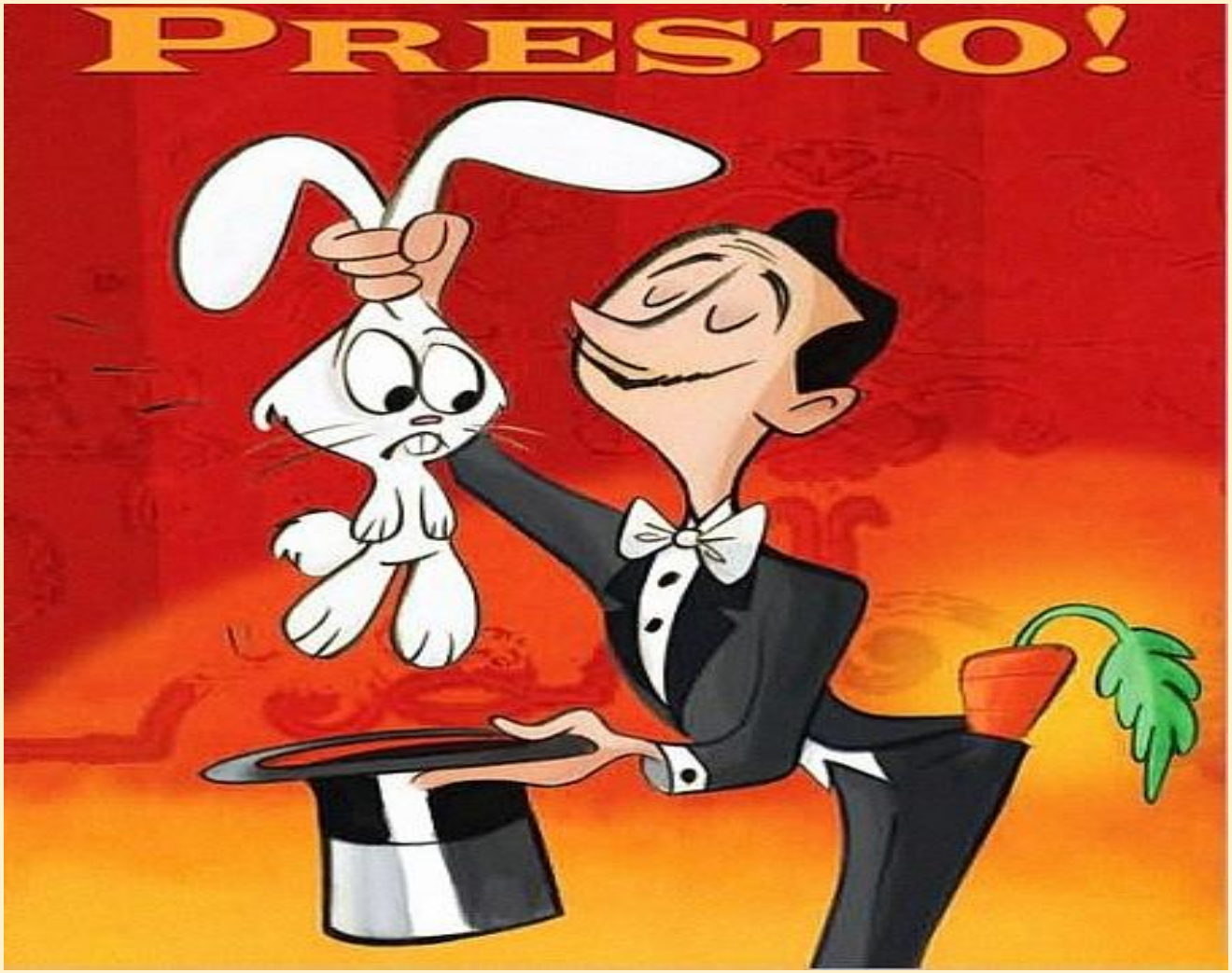
- As a result, scientists themselves admit that things like gravity or "the laws of nature" could not have caused the Big Bang since they began **with**, not **before**, the Big Bang

- Another theory says the universe was caused by quantum fluctuations (i.e., fluctuations in a quantum vacuum, which is a vacuum field or state with the lowest possible energy and no physical particles)

- This theory says a vacuum existed before the universe did (even though there is no evidence for this) and it somehow "fluctuated" and then, ***PRESTO***, suddenly we had a universe

- Don't worry about trying to understand quantum vacuums since very few people do; instead think about what these scientists are saying

While we all enjoy a good magic show, we also know it’s just a trick and you can't actually pull stuff (not even something as small as a rabbit) out of thin air



But now we are supposed to believe that a universe over 90 billion light years wide with as many as two trillion galaxies just sprang into existence from some sort of fluctuation like a cosmic magic trick?

The Big Bang (con't):

- But regardless of the scientific theories, the reality is that science can't go all the way back to the exact time of the Big Bang (or even before it) since **time** and **matter** did not even come into existence until the Big Bang occurred

- As a result, what caused the Big Bang can never be scientifically known with 100% certainty

- However, it is universally true in human experience that everything that has a **beginning** has a **cause**, something that causes it to come into existence

- In other words, things don't just pop into existence, uncaused, out of nothing

For example, if you see a bunch of trees lined up in a row in a garden nursery

Then you know it's a good bet that someone probably planted those trees

And if you see nice, shiny new cars sitting on the dealer's lot

Then you know it's a good bet that someone probably made those cars at a very sophisticated manufacturing facility

And if you see a sweet, cuddly newborn baby

Then you know for sure that the baby has a mom and a dad

The Big Bang (con't):

- So if everything that has a beginning has a "beginner", a cause that brings it into existence, then what caused the Big Bang?
- Is a universe with as many as **two trillion galaxies** (with each having on average **100 billion** to **400 billion** stars) really just a random accident?
- Or is the best explanation that the universe had a cause, a being of infinite power and intelligence who brought it into existence
- One Nobel Prize winner said "The best data we have are exactly what I would have predicted had I nothing to go on but the first five books of Moses, the Psalms and the Bible as a whole"

2. Evidence from the "Just Right" Universe

"The heavens declare the glory of God" (Psalm 19:1)

The "Just-Right" Universe – the Evidence from Physics:

- Physics is the scientific study of matter and energy and how they interact with each other (energy can take the form of motion, light, electricity, radiation, gravity etc.)

- This includes the study of the universe's fundamental laws and physical constants (things like gravity and the speed of light, which we believe to be the same or constant throughout the universe)

- Thanks to physics, we now know that the fundamental laws and constants of the universe have precise numerical values that could have been different (but weren't)

- One astronomer identified **35** physical laws and constants that must have exact values for life to exist in our universe and noted that each one just happens to have exactly the required value

They are all amazingly **balanced** (i.e., “just right”) for the universe and life to exist (if even one had a different value, the whole thing would collapse)

Let's consider Gravity for a second:

- For example, if the force of gravity were different by just one part in **ten thousand billion billion billion billion**, then no life would be possible anywhere in the universe

- How precise is that? Light travels just under **5.9 trillion** (i.e., **5,900,000,000,000**) miles in a year (a "light year"), and the universe is over **90 billion** (i.e., **90,000,000,000**) light years across

- Now imagine there is a tape measure stretched across the entire universe (across all those miles) and that gravity is represented by a single mark on the tape measure

- If the setting for gravity were moved even just **one inch** to the left or the right, then life would be impossible anywhere in the universe

And it's not just gravity that is so finely tuned for life. For example, life would be impossible anywhere in the universe IF:

- the ***ratio of electrons to protons*** in the universe was different by just one part in **ten billion billion billion billion**; or
- the ***strong nuclear force*** was different by just one part in **ten thousand billion billion billion billion**; or
- the ***expansion rate*** of the universe was different by just one part in **one thousand billion billion billion billion billion**; or
- the ***cosmological constant*** was different by just one part in **one hundred million billion billion billion billion billion billion**

Then there is the mass density of the universe, which is precise to one part in **one hundred thousand billion billion billion billion billion billion billion**, meaning if the amount of mass in just **1 dime** had been removed or added to the universe during the Big Bang…

then the balance of the universe would have been thrown off and physical life wouldn't have been possible anywhere in the universe

The original phase-space volume of the universe (the mother of all fine-tuning)

- And then there is the "original phase-space volume" of the universe, which refers to the required conditions of the early universe (including its necessary evenness or smoothness)

- One famous scientist says the odds it was just right are **one in 10 billion multiplied by itself 123 times**, a number so large it can't be written down since it has more zeroes than all the atoms in the entire universe!

- To put that in perspective, the odds you will get four aces in poker where you are dealt just five cards (i.e., you don't get to draw three extra cards) and where there are no wild cards are **one in 54,145**

- This means you would have to play **54,145** hands of poker before you should expect to get four aces even just **one time** (that's more than 1,000 hands of poker every year for over 50 years)

The "Just-Right" Universe (con't):

- Well it turns out your chances of getting four aces **7 times in a row** (which everyone knows is **impossible!**) are better than the chances of even one of those physical laws just randomly having the right value

- Now, you don't have to be a scientist or even know what all those physical laws and constants mean to see the degree to which the universe appears to be intricately **designed** and **fine tuned**

- What is the best explanation for that? Did we just luck out? Was it all random chance, and are we just the lucky winners of some sort of cosmic lottery? Or maybe the answer is much simpler than that

- If the laws of physics are **fine tuned** to an incomprehensibly-precise degree, then isn't the most reasonable explanation that they were fine-tuned by an infinitely intelligent **fine tuner**

3. Evidence from the "Privileged Planet"

"Where were you when I laid the earth's foundation?" (Job 38:4)

The "Privileged Planet" – the Evidence from Astronomy:

- Astronomy is the scientific study of celestial objects (such as planets, comets, stars, galaxies and the universe as a whole) and is one of the oldest sciences that we have

- There is a commonly-held view that there must be millions of planets just like Earth in the universe that can support life

- But astronomers have found that to sustain life, a planet and its moon, sun and galaxy must have a surprisingly high number of parameters and characteristics falling within narrow ranges

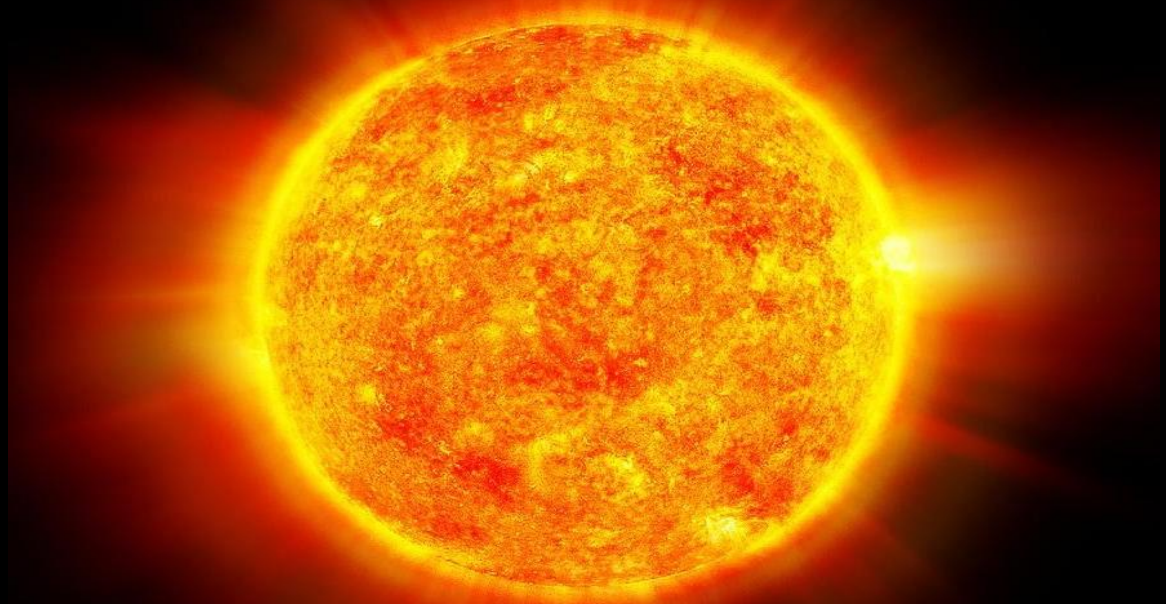
Let's look at some examples of these parameters:

("parameter" just means something measurable that needs to meet a certain requirement)

- *Galaxy parameters*:
  - the galaxy must be just the right type of galaxy
  - the galaxy must be just the right size
  - the galaxy must have just the right location within the universe
- *Solar system parameters*:
  - the sun must be just the right age
  - the sun must have just the right mass and metallicity (i.e., metal content)

Solar System Parameters:

The sun also needs just the right color and amount of light



Solar System Parameters:

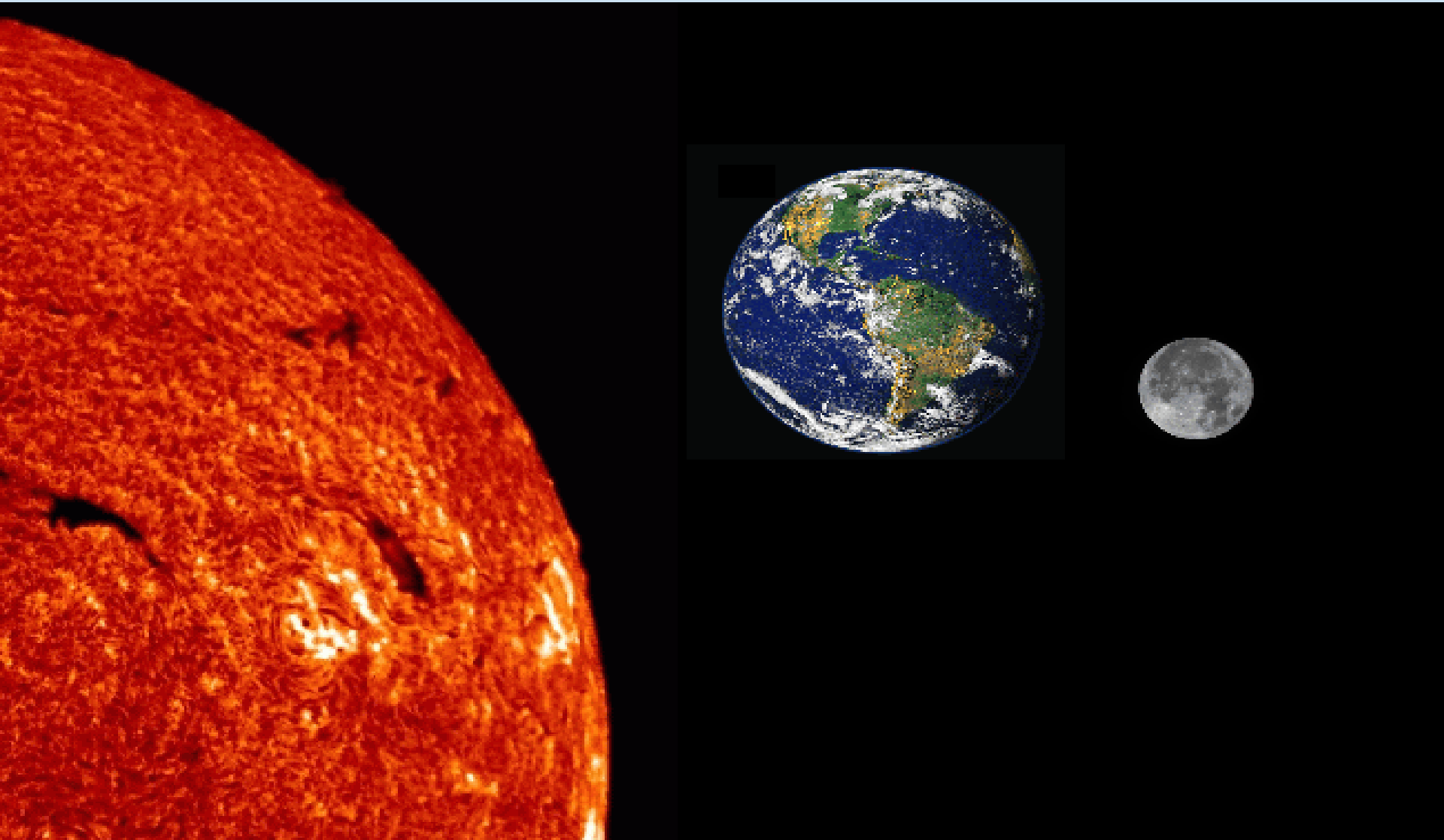
Finally, the sun must also be just the right distance from the center of the galaxy

Planetary parameters:

- *And there are also lots of planetary parameters, including that the planet must have just the right*:
  - surface gravity
  - orbit
  - rotation period
  - age
  - magnetic field
  - thickness of crust
  - rate of oxygen to nitrogen in the atmosphere
  - level of carbon dioxide, water vapor, oxygen and ozone in the atmosphere

Planetary Parameters:

Lastly, the planet must be just the right distance from the sun



The "Privileged Planet" (con't):

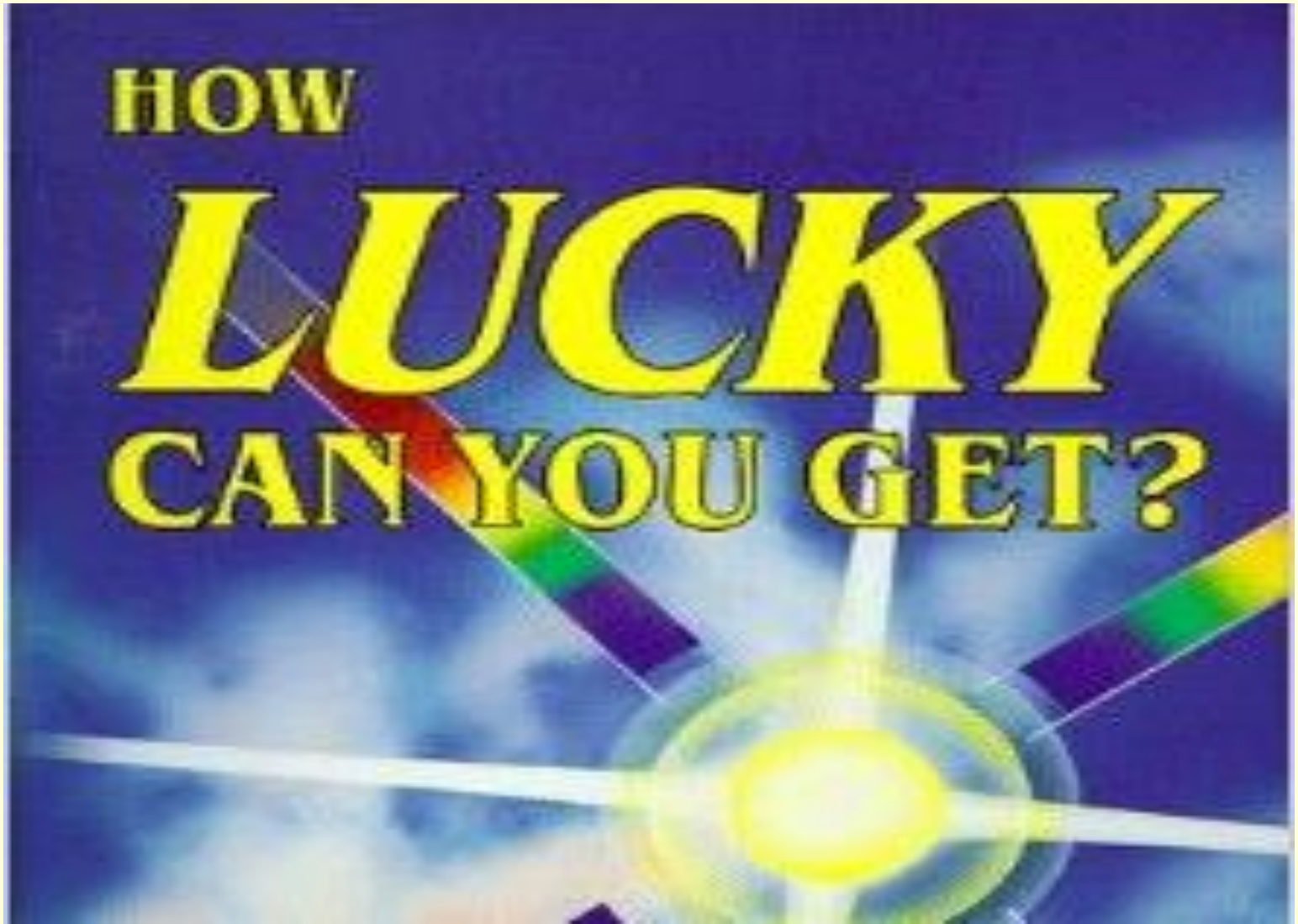
- One leading astronomer has identified at least **66** parameters that must fall within a specific range in order for a planet to sustain life (others think it could be much higher)
- As it turns out, the Earth meets **every** single one of the required parameters!
- This astronomer then calculated the probability that a planet could meet all of those parameters
- And he compared that to the currently-estimated number of planets in the entire universe

He found the chance of even <u>one</u> planet in the entire universe meeting all those parameters was **<u>1</u>** in

one trillion trillion trillion trillion trillion trillion trillion trillion trillion trillion trillion

(that's a one with 144 zeroes after it!)

In other words, the Earth is nowhere near as common as you might think!



The "Privileged Planet" – are we just lucky?

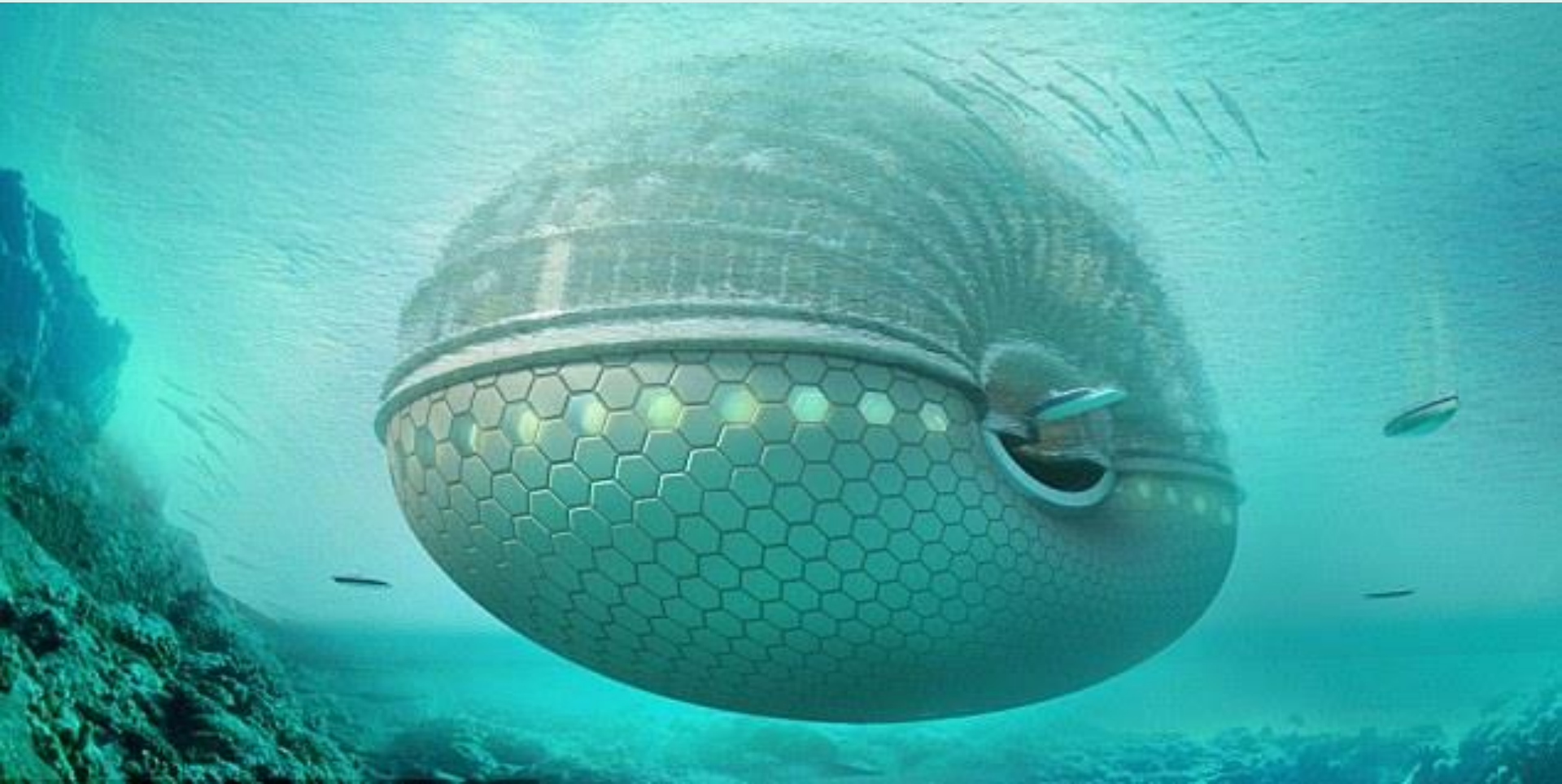
- Thanks to astronomy, we now know that the Earth has a location, size, composition, structure, atmosphere and temperature that is **precisely** balanced to sustain life

- Some claim it is just "cosmic luck", that with so many planets in the universe, one of them was bound to have the right characteristics

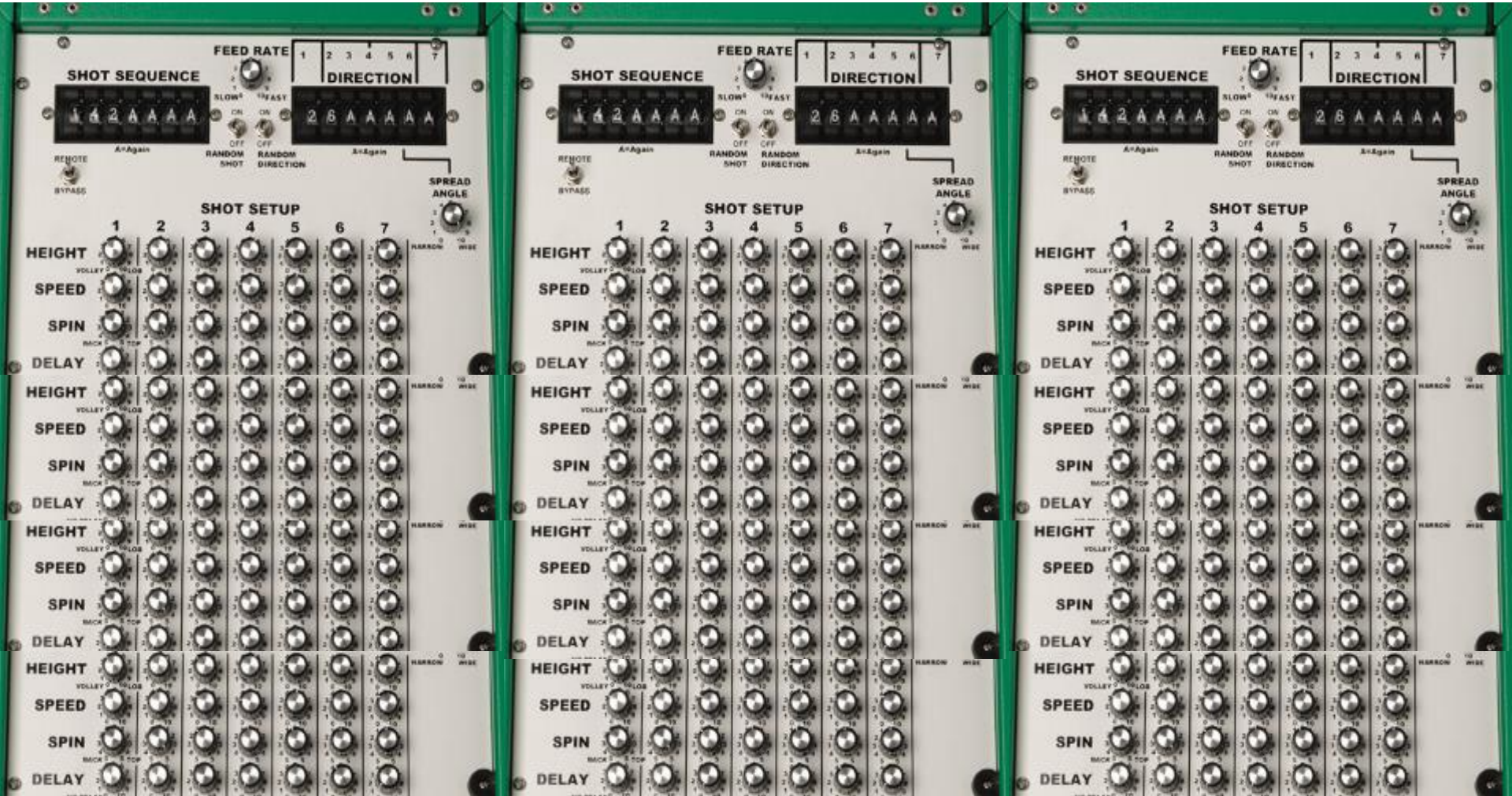
- But others say that it is not clearly bound to eventually happen, and from the perspective of random chance, it seems impossible that it should have happened even this one time!

- So who do we believe?

Think about it this way. Imagine astronauts travel to another world covered by oceans and discover what appears to be an artificially made underwater habitat or biosphere designed to support life



Inside the biosphere they discover a wall of hundreds of dials that control the environment within the habitat



The “Privileged Planet” – are we just lucky?

- Each dial has a wide range of settings and if each one is not set at just the right setting, life cannot survive in the biosphere
- They are amazed to find out that every dial is in fact set at the exact setting it needs to be at for life to exist in the biosphere
- They are stunned to discover that the odds of each of the dials being in the exact right setting is **one** in

**1,000,000,000,000,000,000,000,000,000,000,000,000,000,000,
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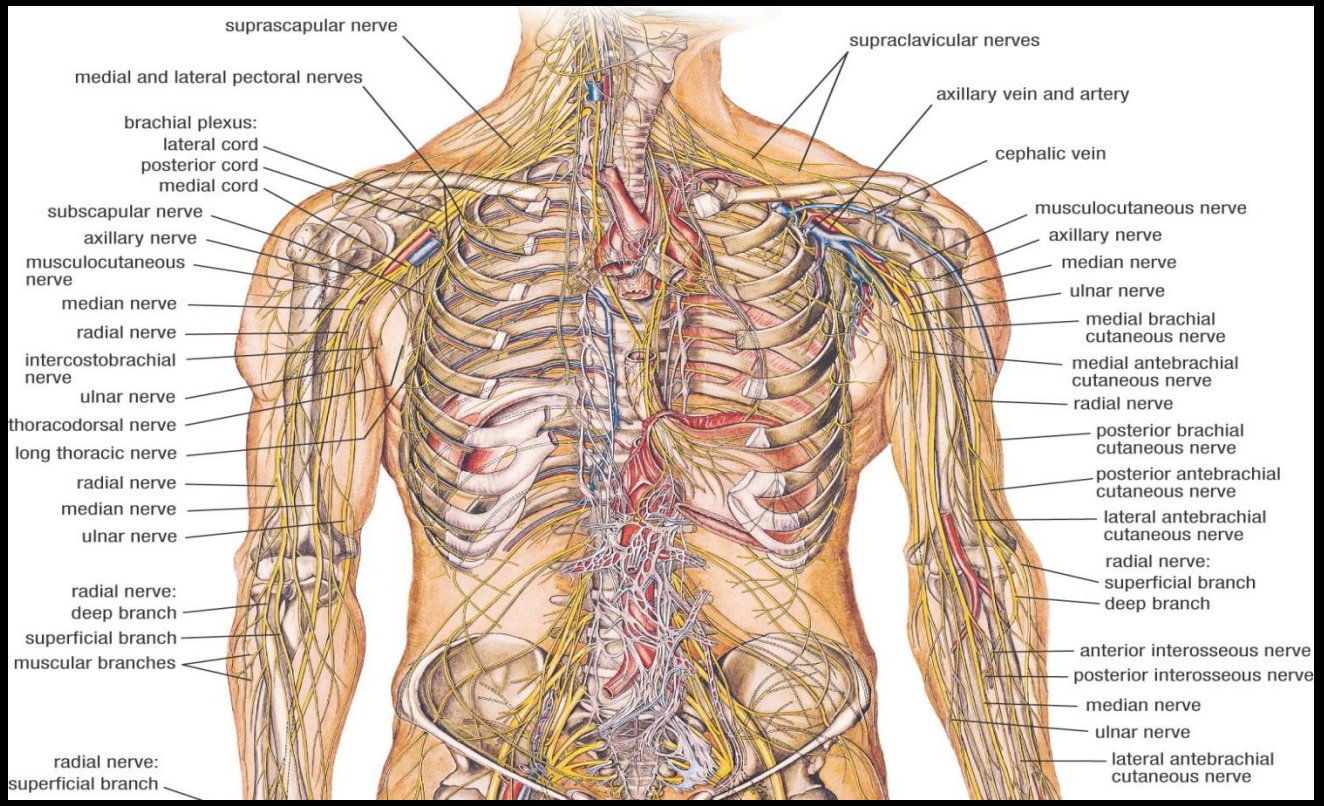
000,000,000,000,000,000,000,000,000,000,000,000,000,000,
000,000,000,000,000,000**

(yep, that’s a one with 144 zereoes)

The "Privileged Planet" – are we just lucky?

- Do they decide that the whole thing was a random accident?
- That volcanoes on this planet spewed out compounds that randomly assembled themselves into a complex biosphere and that the dials just happened to be set at just the right settings
- Or do they conclude that the habitat was obviously **designed** and **fine tuned** by a powerful and intelligent being who then painstakingly set the dials in just the right positions?
- So when it comes to Earth, isn't the answer as to whether it was intelligently designed for life fairly obvious, and isn't it also fairly obvious who did it

4. Evidence from the "Intelligent Design" of all life on Earth



Then God said, "Let us make mankind in our image" (Genesis 1:26)

Intelligent Design – the Evidence from Biology:

- Design is the intentional arrangement of parts (i.e., arranging parts in a specific way to accomplish a specific purpose)
- "**Intelligent Design**" theory says that the same way that we determine the presence of **intelligent activity** in all areas of our everyday lives, so we can also determine the presence of intelligent activity in the complex design of life on earth
- Complexity doesn't refer to something that is merely elaborate (the way snowflake patterns may be elaborate)
- Rather, "intelligent design" refers to something that is complex and also performs a specific, useful function

For example, what we would say if one day we could send astronauts to Mars and when they get there they find something that appears to be a complicated machine

Intelligent Design (con't):

- We might not know who built the machine (since "little green men on Mars" exist only in science fiction), but it seems hard to believe that anyone would claim it was just random chance

- In other words, no one would believe that pure luck resulted in the random assembly of parts that just happened to do specific functions almost as if by magic

- Rather, we would know the object was intentionally designed by an intelligent being (even if we don't know who it was) based on our own experience with machines that we build here on Earth

- That's what intelligent design does. It starts by looking at the complexity in biology ("**bios**" means "life")

Intelligent Design (con't):

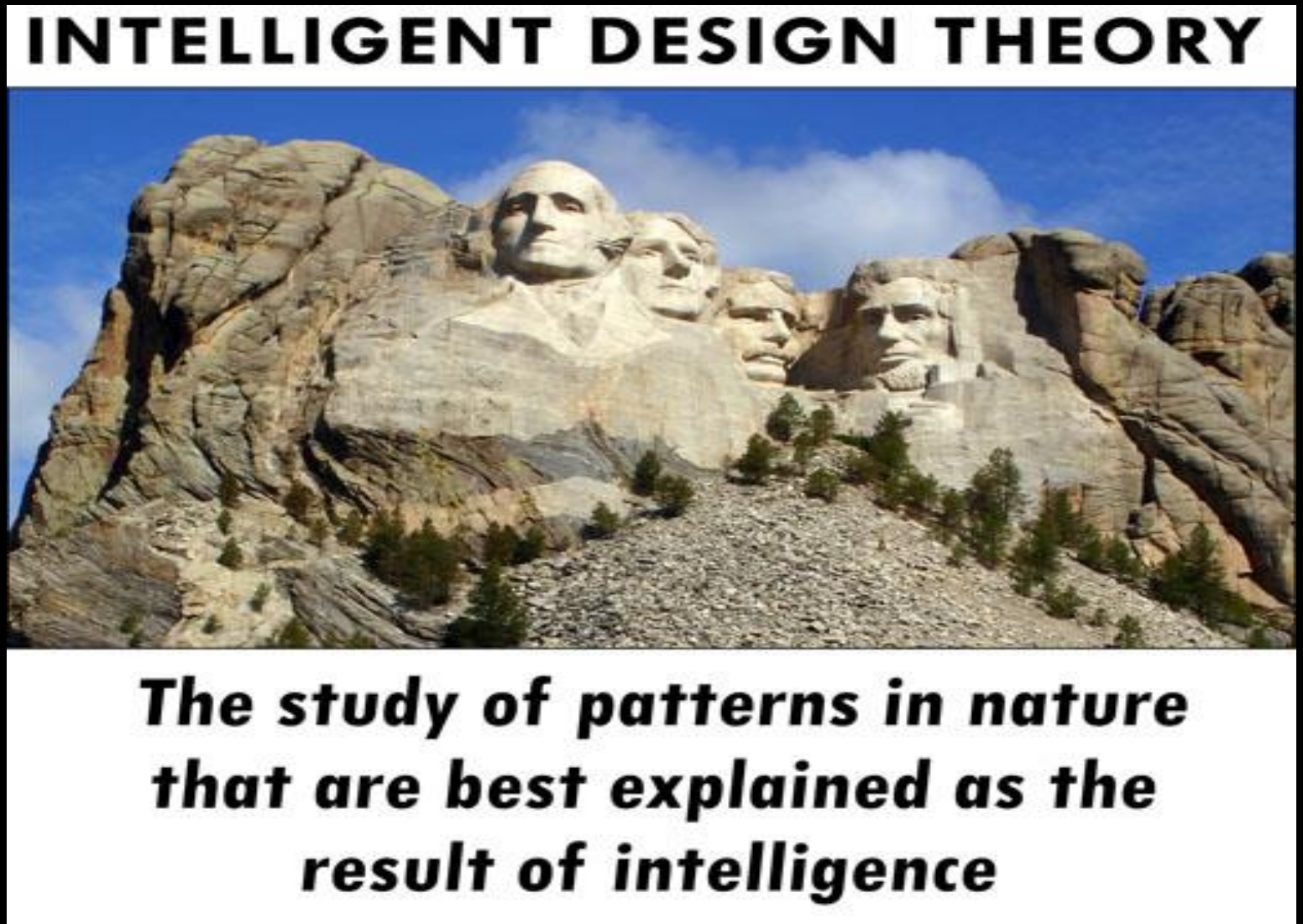
- And then notes that when we see what look like regular machines, we automatically assume (as we should) that they were made by intelligent beings (i.e., really smart people)

- So when we see biological machines in all life on Earth, isn't the best explanation that they were also made by an intelligent being and not by random chance?

- A world famous scientist who is an atheist (i.e., someone who says that God does not exist) defines biology as:

> "the study of complicated things that give the **appearance** of having been designed for a purpose"

But intelligent design says, hey, if it **appears** to be designed, then maybe it **was** designed!



Intelligent Design – the Bacterial Flagellum:

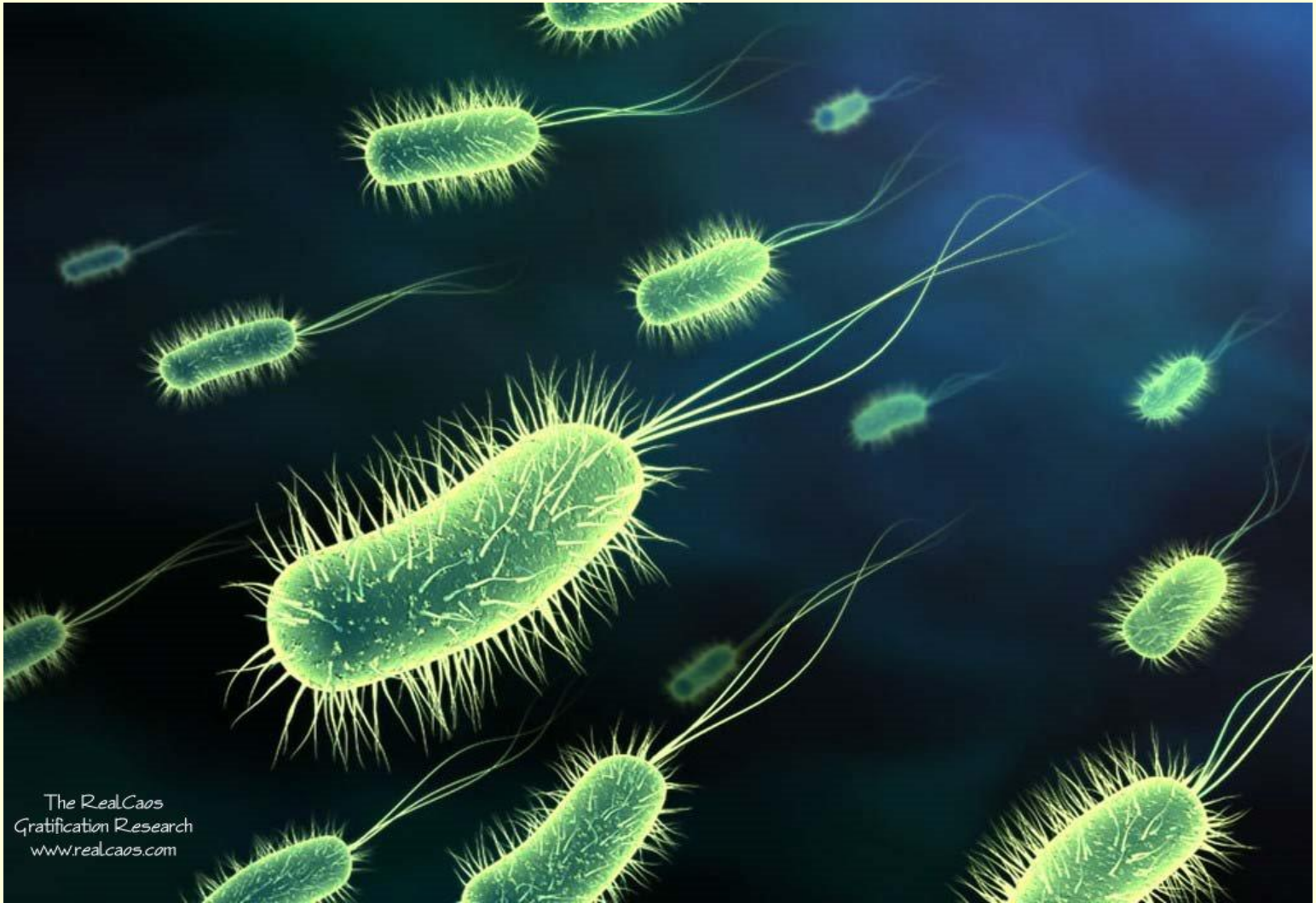
- Let's look at a few examples of intelligent design in biology, starting with simple bacteria

- There are an estimated **five million trillion trillion** bacteria on the planet (that's a five with **30** zeroes after it!)

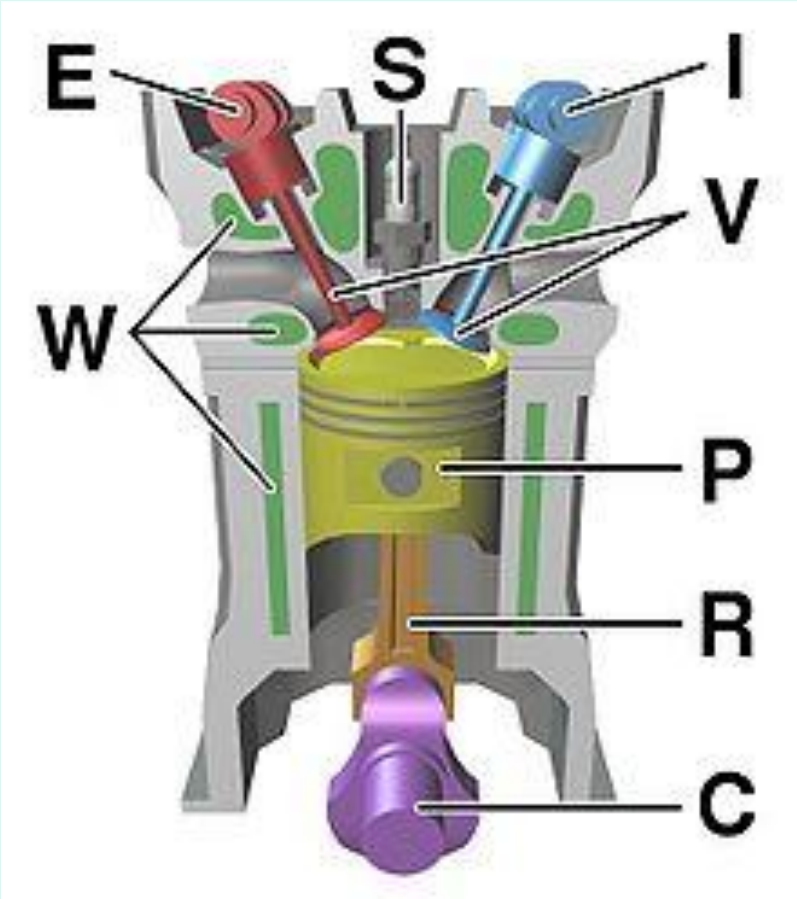
- Most bacteria have a flagellum, which is basically just a tail that spins at a high rate and allows the bacteria to move about

- In other words, bacteria are like **biological motorboats** with the flagellum being like a **boat motor** with a spinning propeller

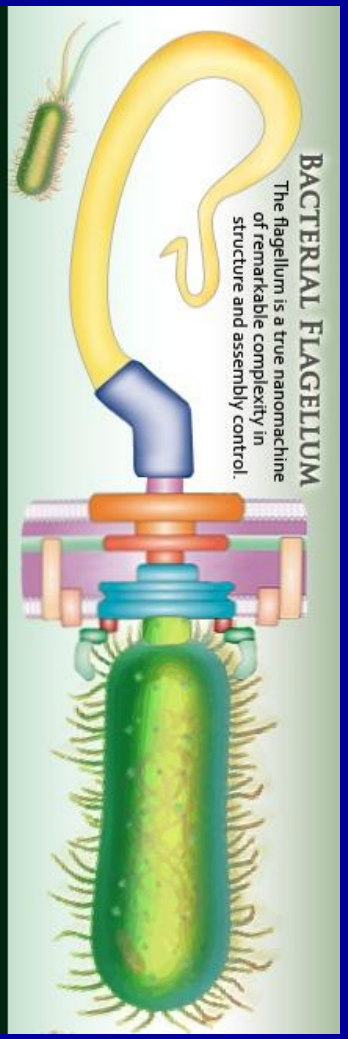
This is a highly magnified picture of bacteria (bacteria are invisible to the plain eye). Note the flagellum, which is the whip-like tail of the bacteria

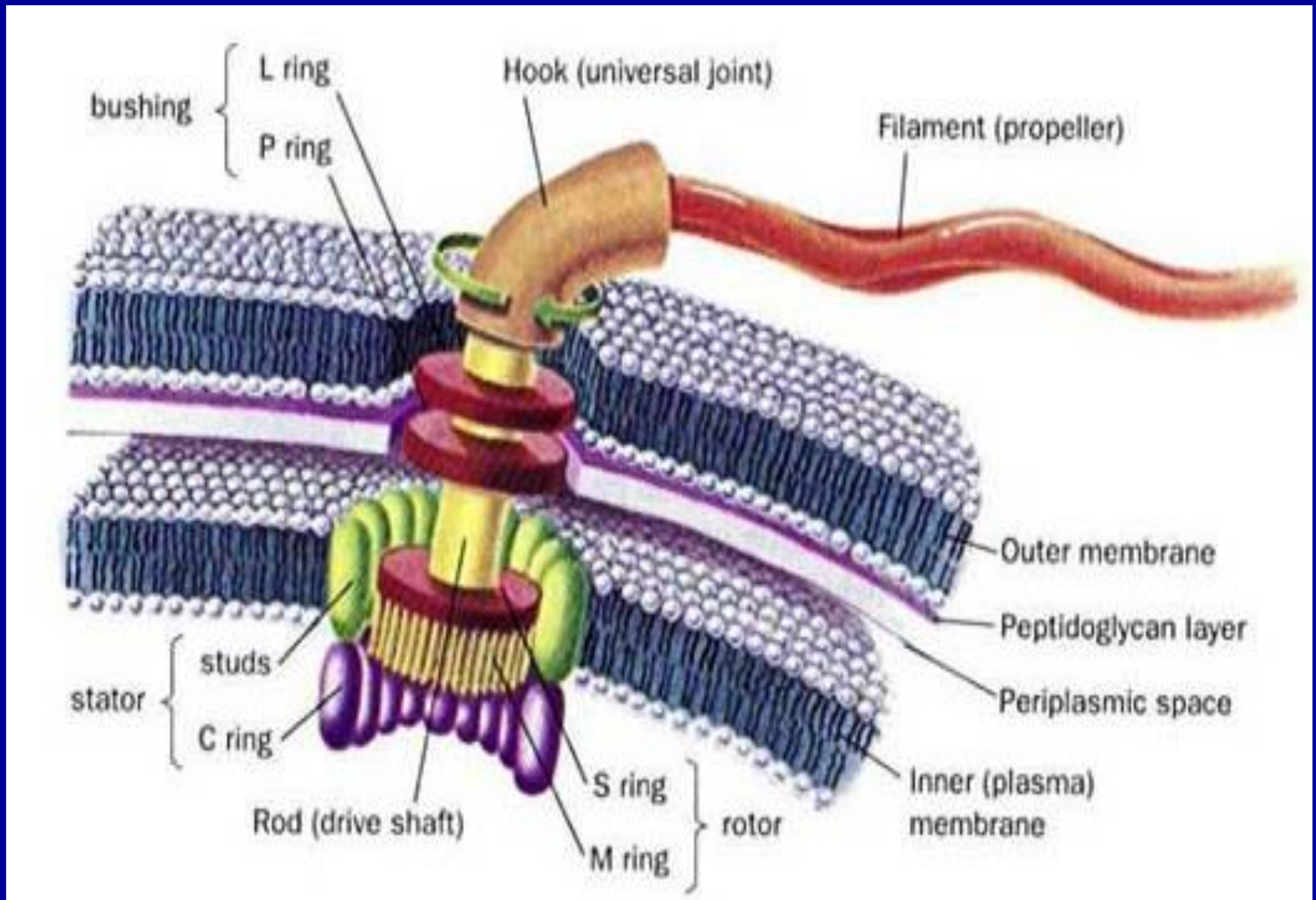


You might think that the bacterial flagellum (which is so tiny that **8,000,000** of them can fit in the width of human hair) is very simple and nowhere near as complex as a real motor boat engine

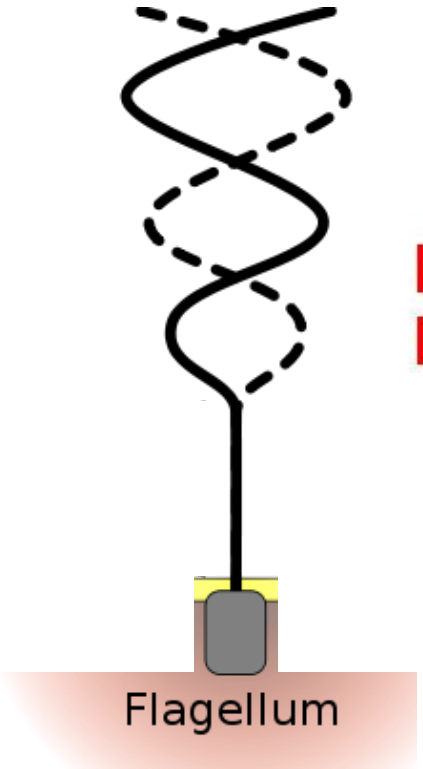


But the flagellum is actually a complex motor consisting of over **30** parts (including a **drive-shaft rotor**, **joints** and a **propeller**) that performs far better than any man-made propeller motor





In fact, this miniature motor spins at a faster RPM (revolutions per minute) than any man-made propeller, with most rotating at up to **17,000** RPM (the rev speed of a Formula One race car) and some spinning at an amazing **100,000** RPM (jet engine rev speed)



Intelligent Design – the Bacterial Flagellum:

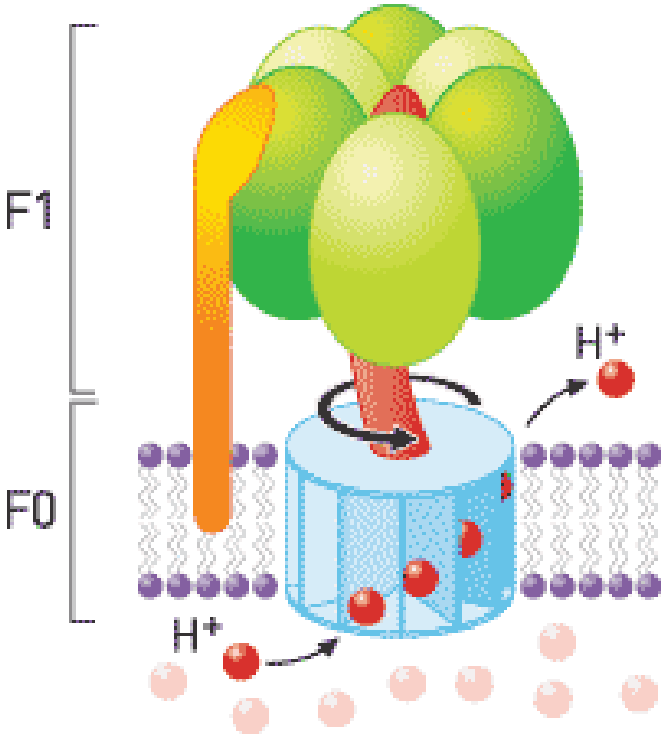
- If the bacterial flagellum were a regular-sized motor, it would be **45 times** more powerful than the average car motor

- In addition, the flagellum can change directions in an instant (putting your car into reverse at **60 mph** will quickly tell you that our engines cannot do the same)

- But the flagellum is not the only amazing motor in our bodies. Scientists say energy in the body comes from **millions** of tiny power generators, each equipped with a crankshaft that spins round and round 24/7

- This power-generating motor is **ATP synthase**, which is present in all life on earth and uses **torque** (i.e., turning force) to create ATP, which is the chemical energy that we use to get up and go

ATP synthase (pictured below on the left) is nature's **smallest** rotary motor (i.e., a motor that turns or rotates), and according to a biophysicist at the University of Illinois, just a **spoonful** of ATP synthase generates as much torque as a car engine



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Intelligent Design – Irreducible Complexity

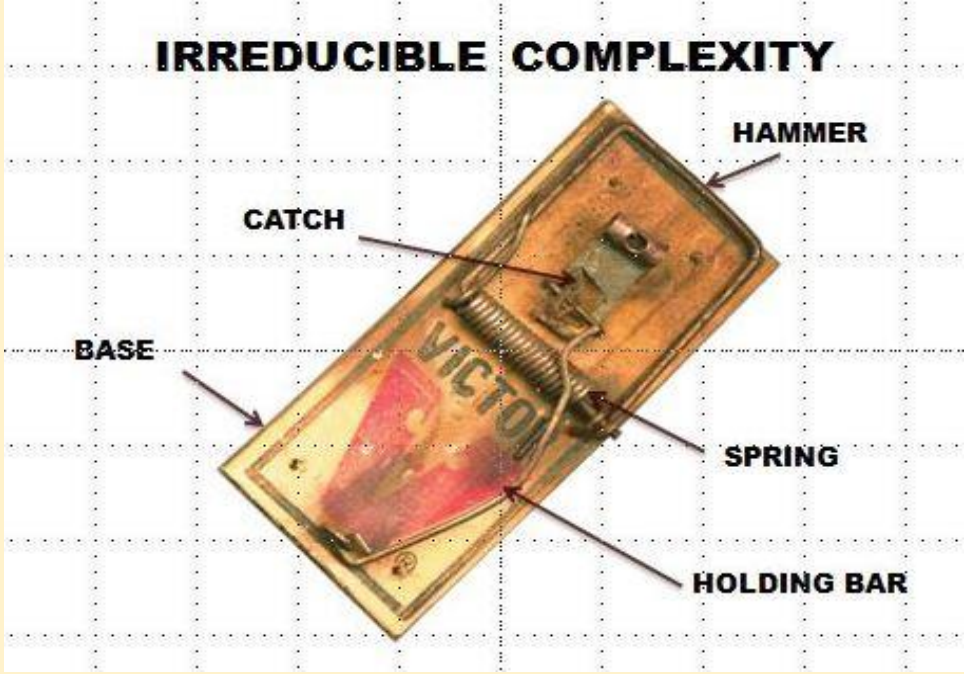
- The bacterial flagellum and ATP synthase are also examples of **irreducible complexity**, something that scientists can't explain

- Scientists say complex life results from simple organisms (like the first cells on earth) changing over time, with organisms that **work best** being able to **survive** to reproduce into newer generations of more complex organisms

- So scientists say **complex** organisms (like people) originally came from **simple** organisms with fewer parts that **over time** became more complex as newer generations added **more parts** (like arms, legs, eyes, brains, etc.)

- But this doesn't explain **irreducibly-complex** organisms, which need **all their parts** in place at the **same time** in order to **work** (they are called "irreducibly complex" because you can't "reduce" them by taking parts away one by one to try to see how they got that way and still have something that **works**)

A good example of irreducible complexity is a mousetrap, which will stop working if you remove any key parts



After all, a mousetrap missing parts isn't a simpler mousetrap with fewer parts that still works and is just waiting to develop into a better mousetrap over time, rather it's just useless junk

Intelligent Design (Irreducible Complexity):

- **So here's the problem**: because these organisms are "**all or none**" organisms where removing even **one key part** causes it all to **stop working**, science can't actually explain how they could have gradually developed over time

- The reason is that in order for simple organisms to change over time into more complex organisms, the simpler organisms have to actually **survive** (so they can reproduce)

- And in order to survive, the simpler organisms have to actually **work** (otherwise they will just **die off** instead of surviving and reproducing)

- But any ancestors (or prior generations or versions) of **irreducibly-complex** organisms with fewer parts **wouldn't have worked**, since taking any part away from an irreducibly-complex organism just causes it **to fail**

For example, for **biological motors** like the flagellum and ATP synthase, an earlier version with **fewer parts** would not have been a **simpler motor** hoping to survive to become a more complex next-generation engine, it would have just been **half a motor** that **didn't work** waiting to be hauled off to the junk yard

Intelligent Design (Irreducible Complexity):

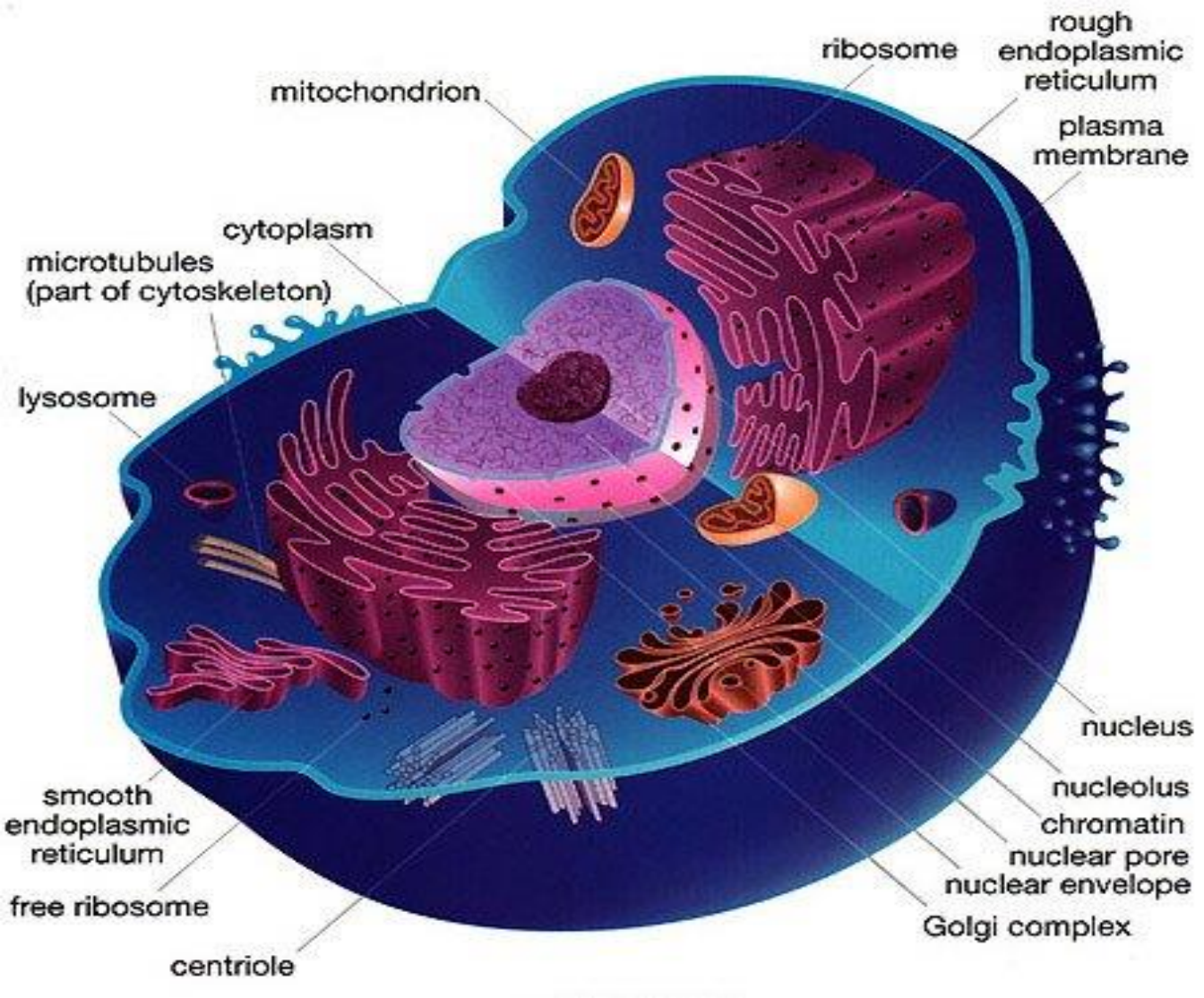
- So there's no way an irreducibly-complex organism could have started off as a simpler version that survived and developed over time into the more complex version, because any earlier version missing key parts **wouldn't have worked** and would have **died off** instead of surviving and reproducing

- But that means the irreducibly-complex organism must have been **complex** from the **very beginning**

- And we know from own experience that things that start off as **complex** (i.e., TV's, computers, iPhones) are complex because they were **designed** that way

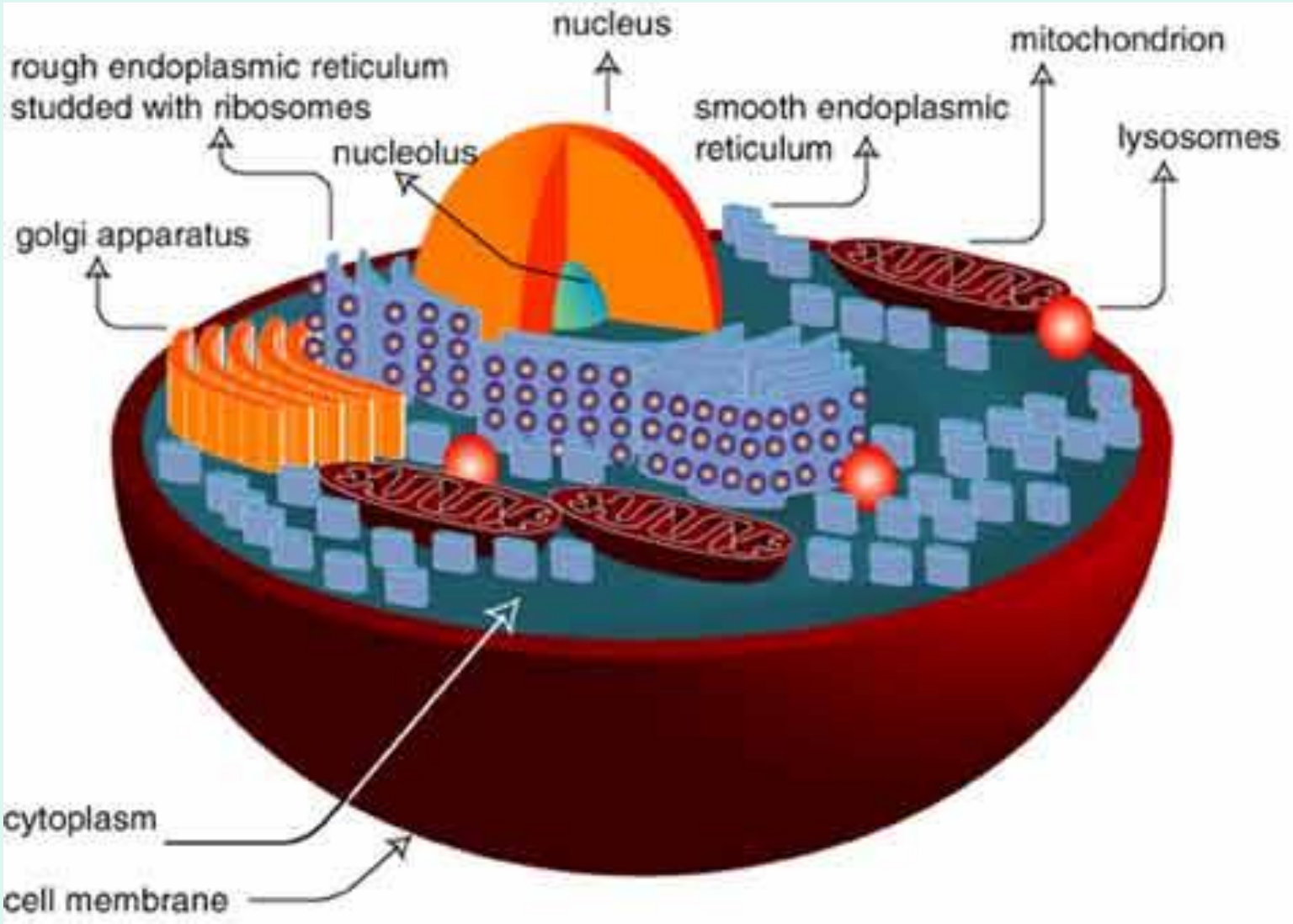
- Which means irreducibly-complex organisms must have been **intentionally designed** that way from the **very beginning**, which means a really intelligent Person must have been the **Designer**

Okay, getting back to intelligent design, let's look next at the cell, the basic component of life



We all know what a manufacturing plant is

But did you know that just one “simple” cell is actually **millions** of times more complex than the most complex manufacturing plant in the world



Intelligent Design – the Cell:

- The cell is a masterpiece of miniaturized complexity (so small that you need a microscope to see it)

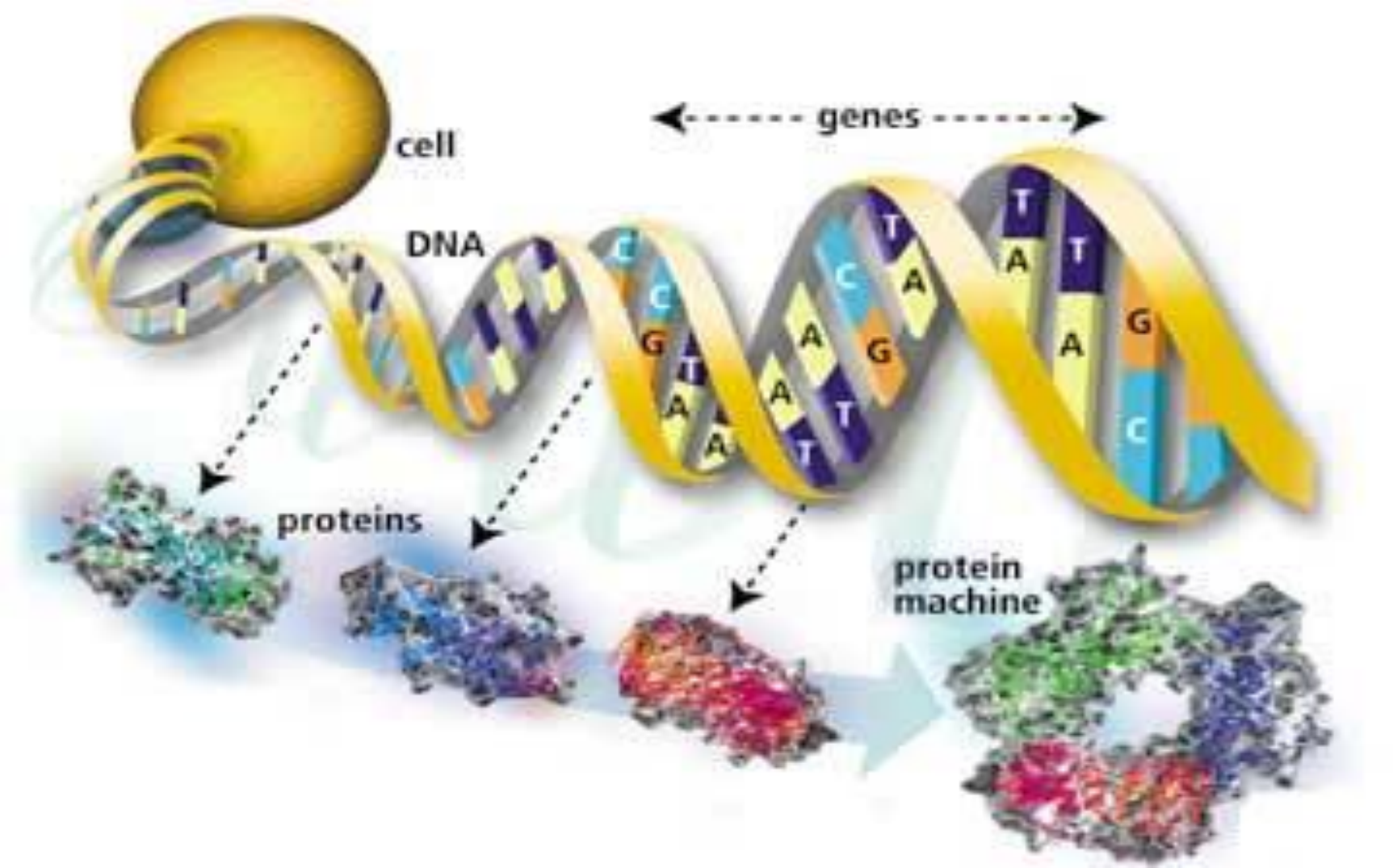
- Every cell is a stand-alone, highly-complex manufacturing facility that carries out some **6 trillion** reactions every **second**

- In fact, each cell in the body manufactures over **2,000** proteins (the basic building blocks of life) every **second**

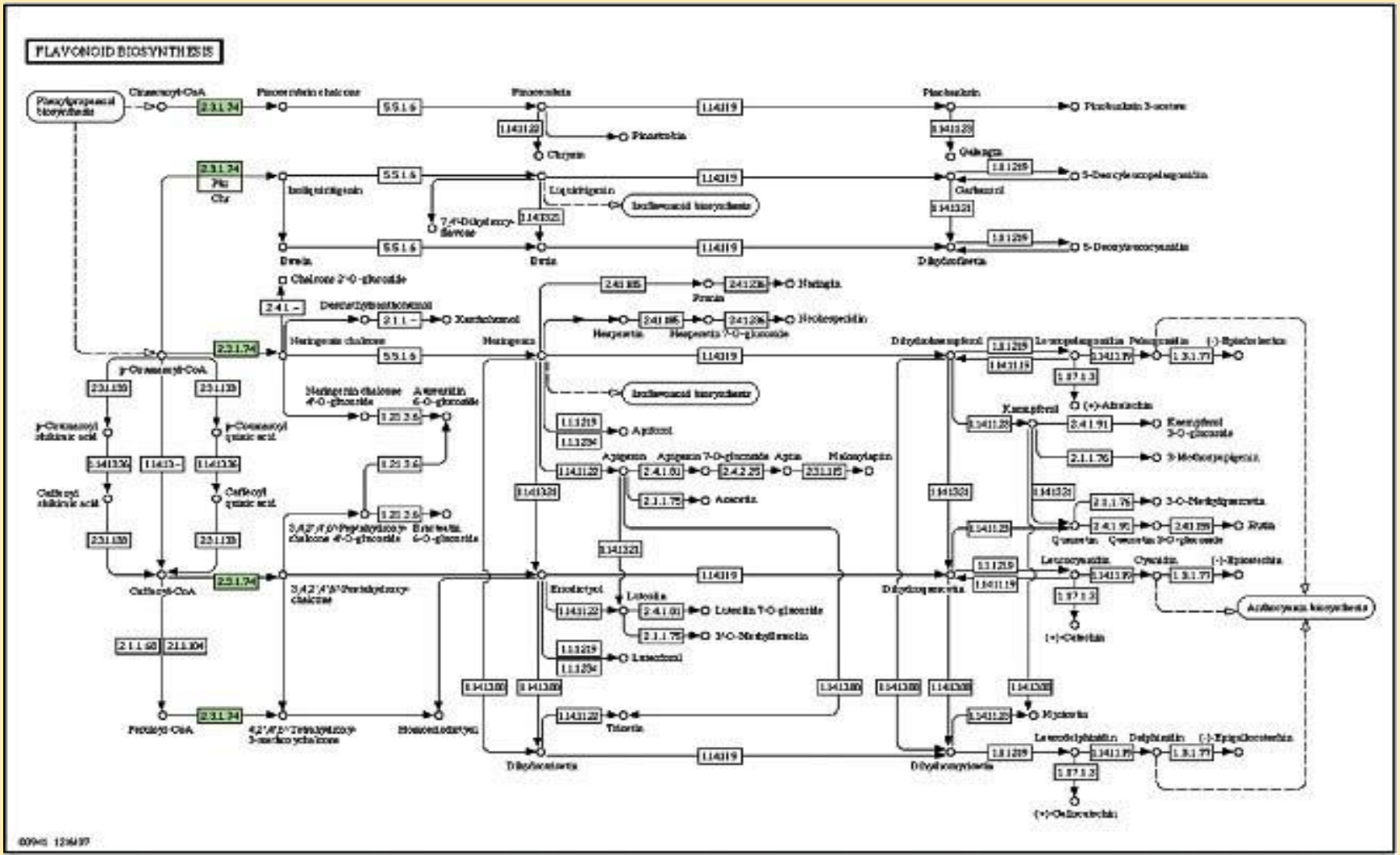
- And according to the most recent scientific estimates, the average human body has over **37 trillion** cells (with some estimates putting it as high as **75** to **100 trillion** cells!)

So while a man-made manufacturing plant might be able to turn out a few hundred cars a day

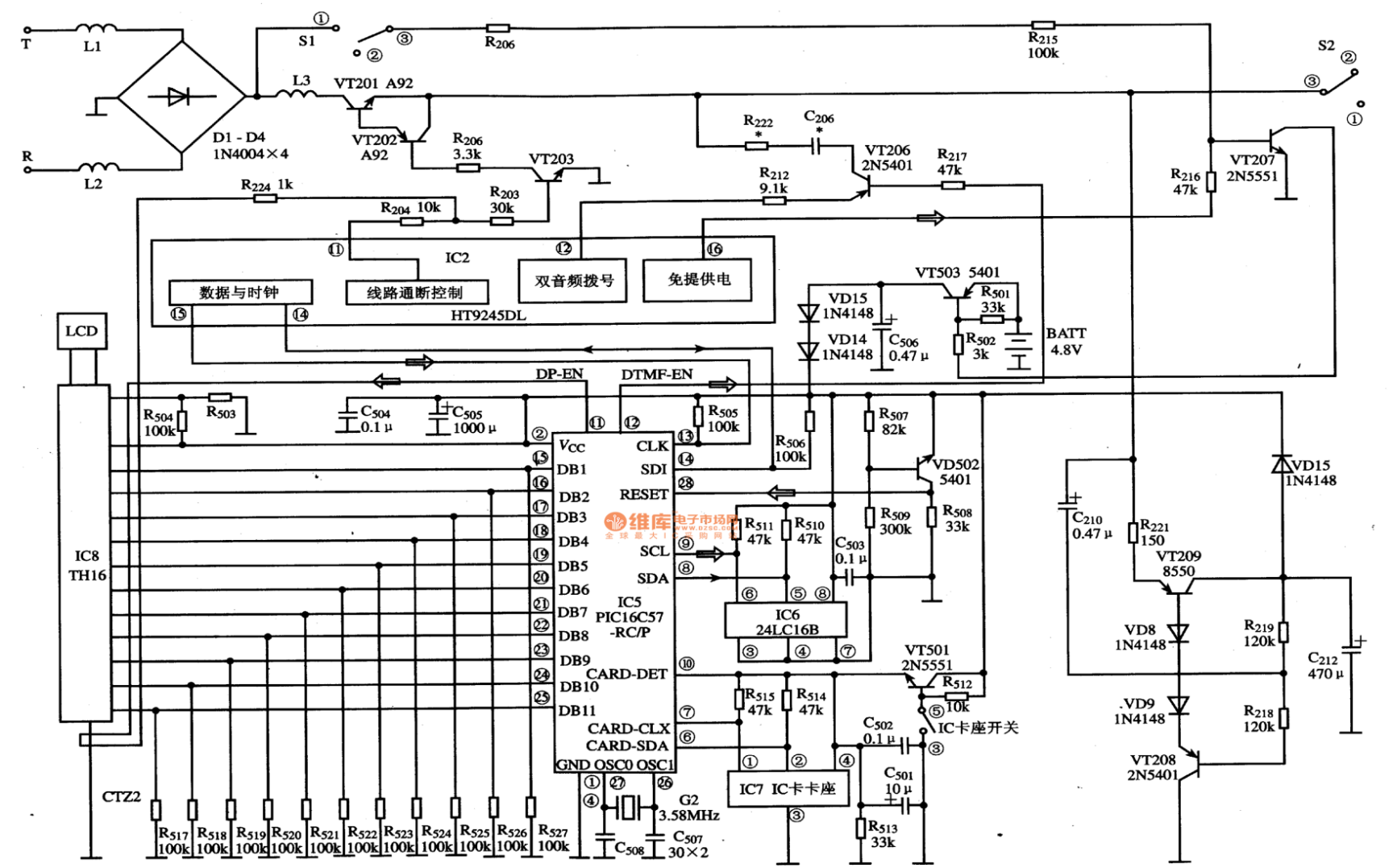
all of the cells in your body combined are **every single second** arranging **150 billion billion** amino acids into carefully constructed chains of proteins



Speaking of protein manufacturing, check out this diagram of a simple **biological pathway** in a living organism (a pathway refers to the series of actions or steps in a cell that lead to a change in a cell, including the assembly of new proteins)

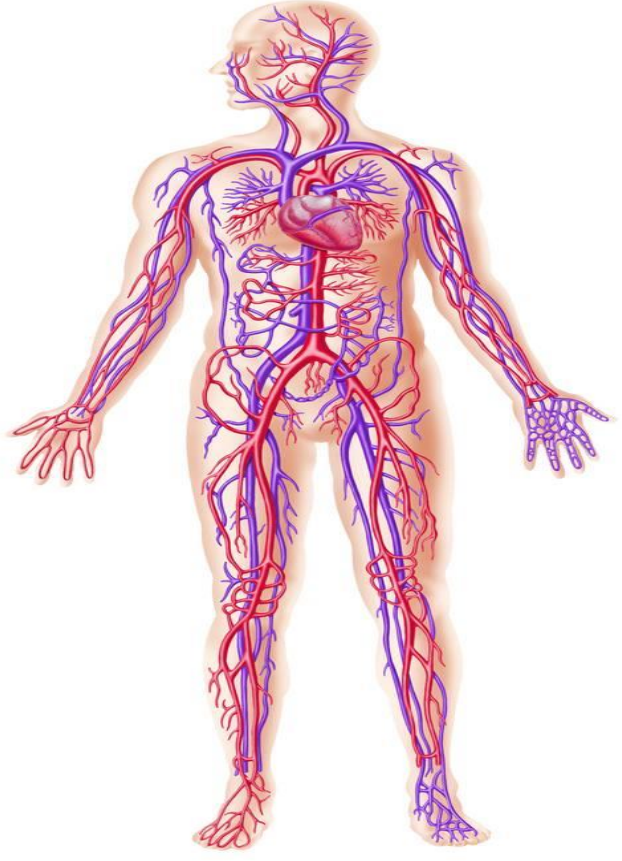


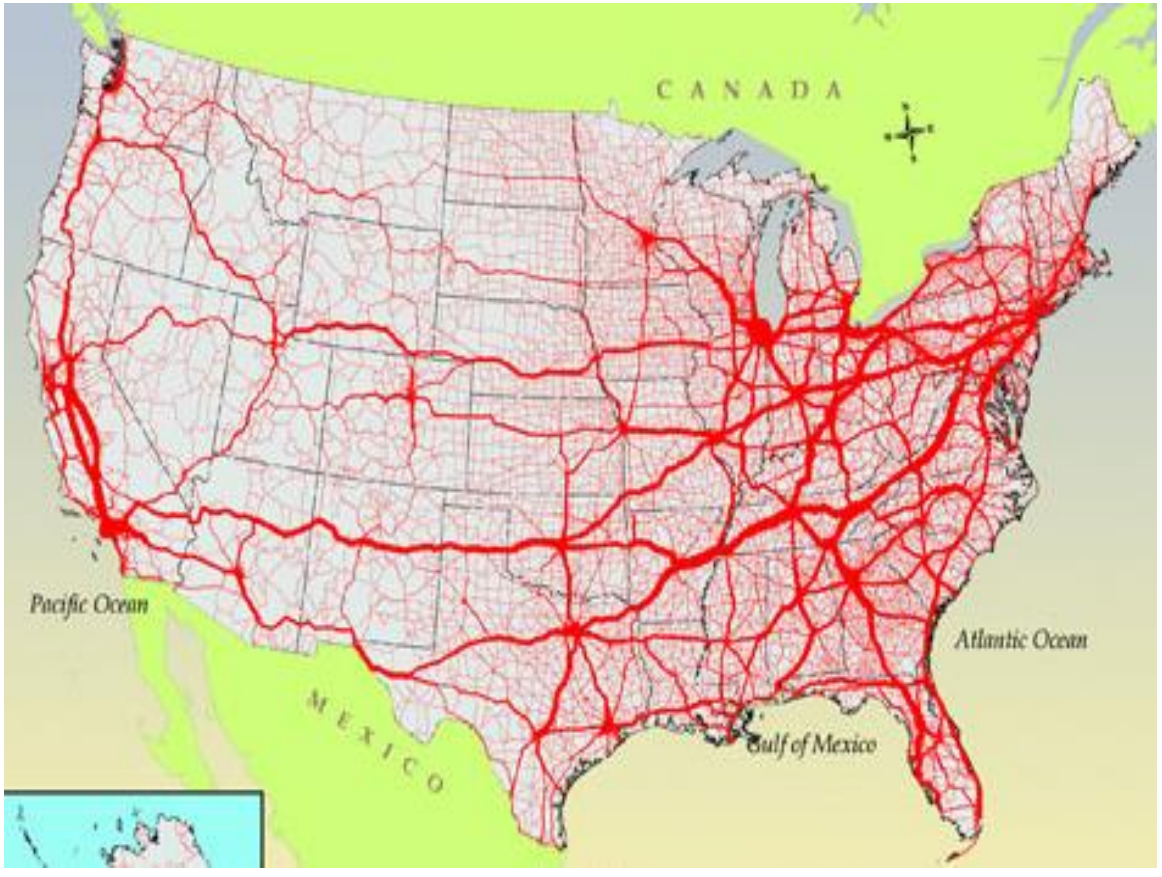
And notice how similar it is to a diagram of an **integrated circuit**, which is a chip that is designed by our smartest electrical engineers and is used in almost all electronic equipment today including computers and cell phones



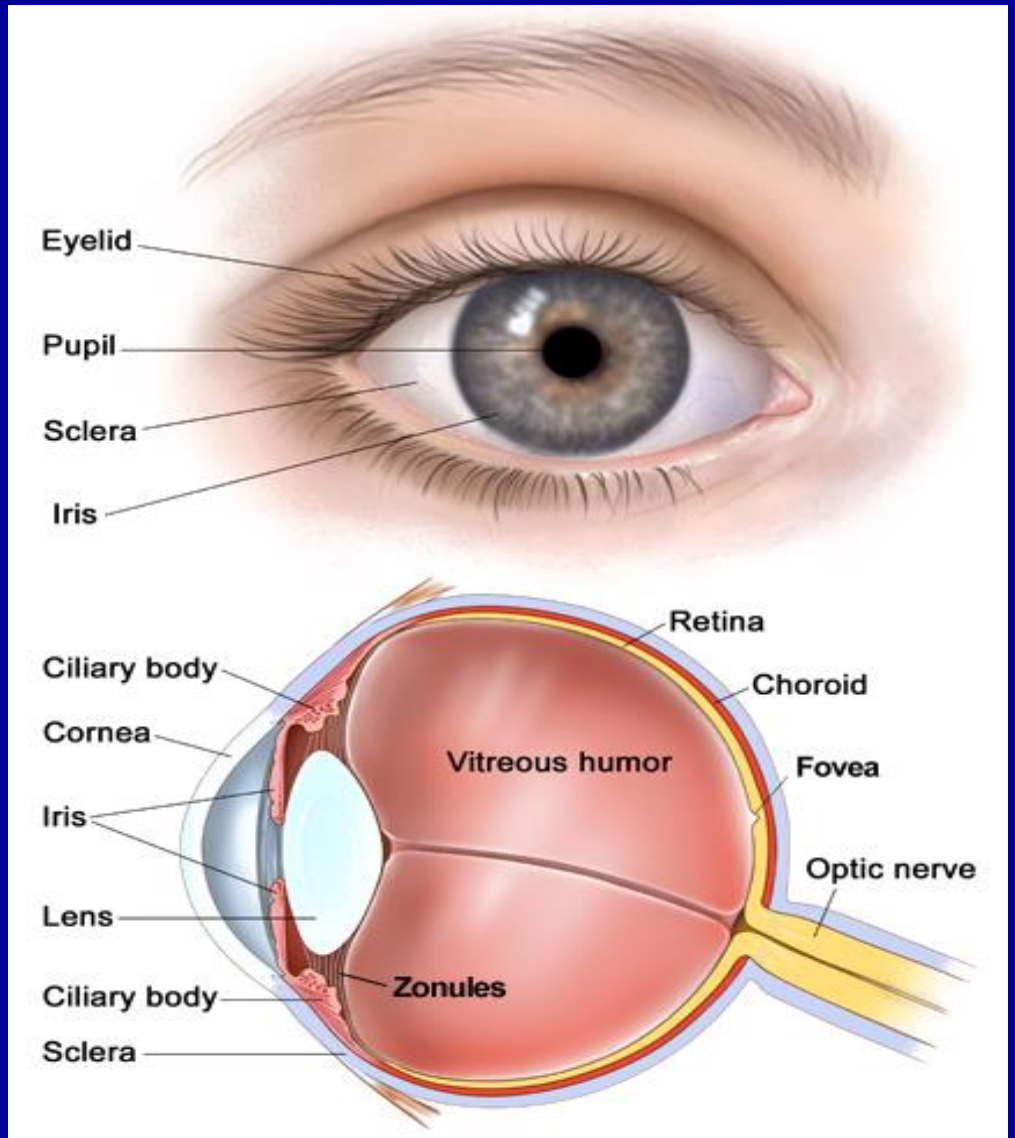
And speaking of pathways, did you know your body has more than **60,000 miles** of blood vessels (veins and arteries), which is more than the interstate highway system for the entire United States (which only has **46,876** miles)

60,000 > **46,876**





And for more intelligent design, what about the amazing complexity of the human eye?



Intelligent Design – the Eye:

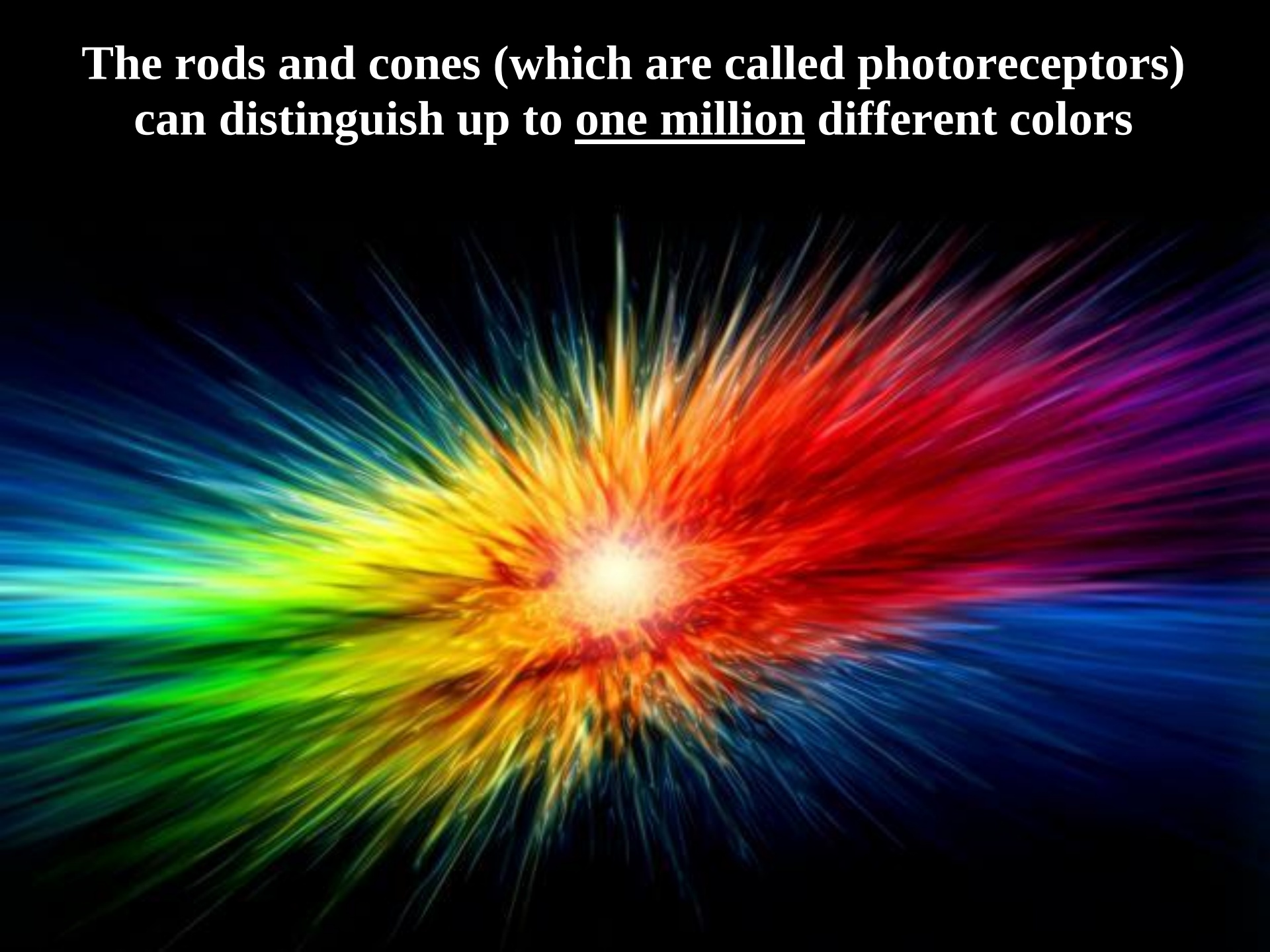
- The human eye is an enormously complex, interrelated system of about **40** individual parts, including the retina, pupil, iris, cornea, lens and optic nerve

- The eye's retina has approximately **137 million** special cells that respond to light and send messages to the brain

- About **130 million** of these cells look like rods and handle the black and white vision

- The other **seven** million cells are cone shaped and allow us to see in color

The rods and cones (which are called photoreceptors) can distinguish up to one million different colors



Intelligent Design – the Eye (con't):

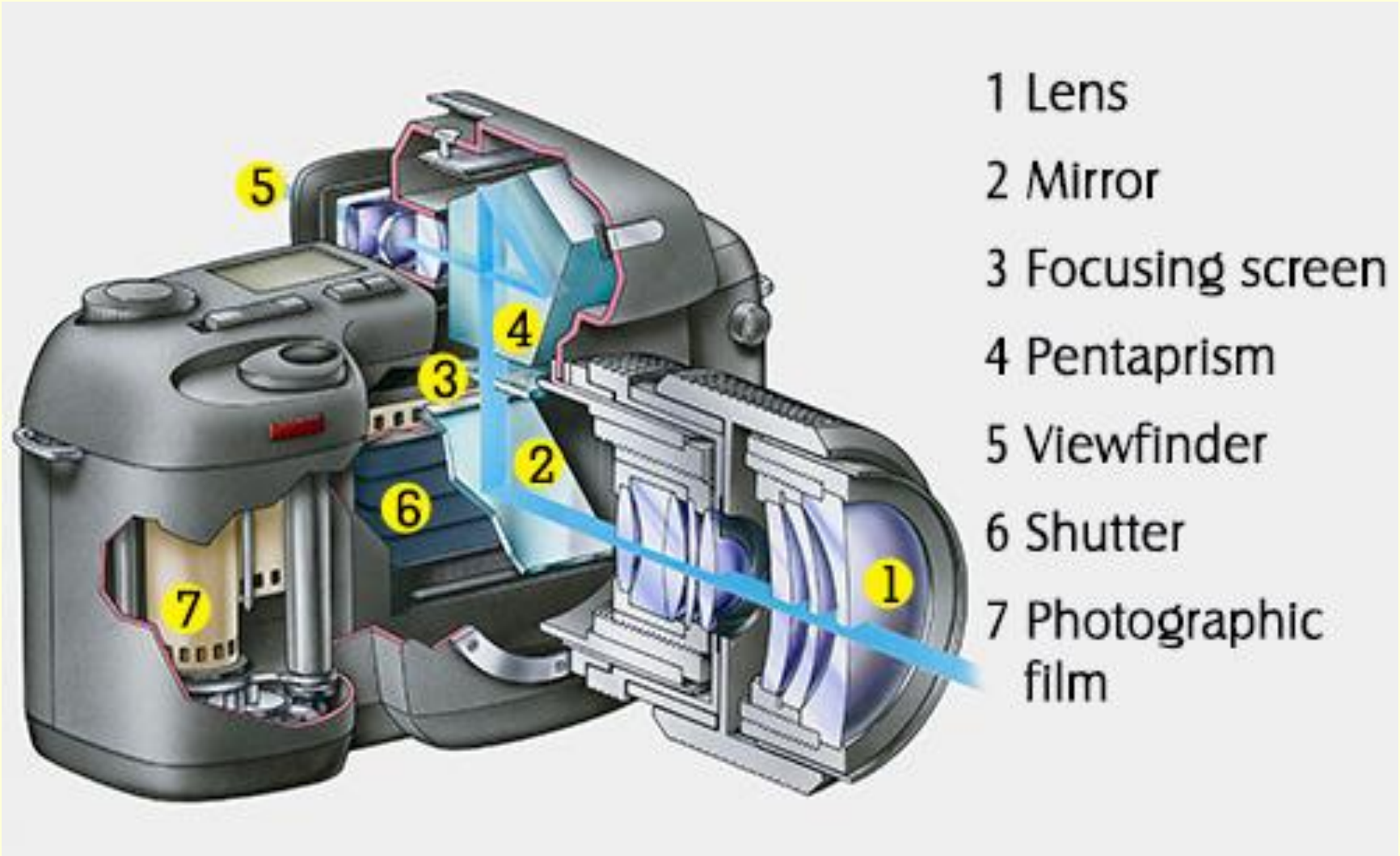
- And the rods and cones can also take in more information than the largest telescope in the world

- Light impressions received by the photoreceptors are translated to electric pulses and sent to the brain by the optic nerve

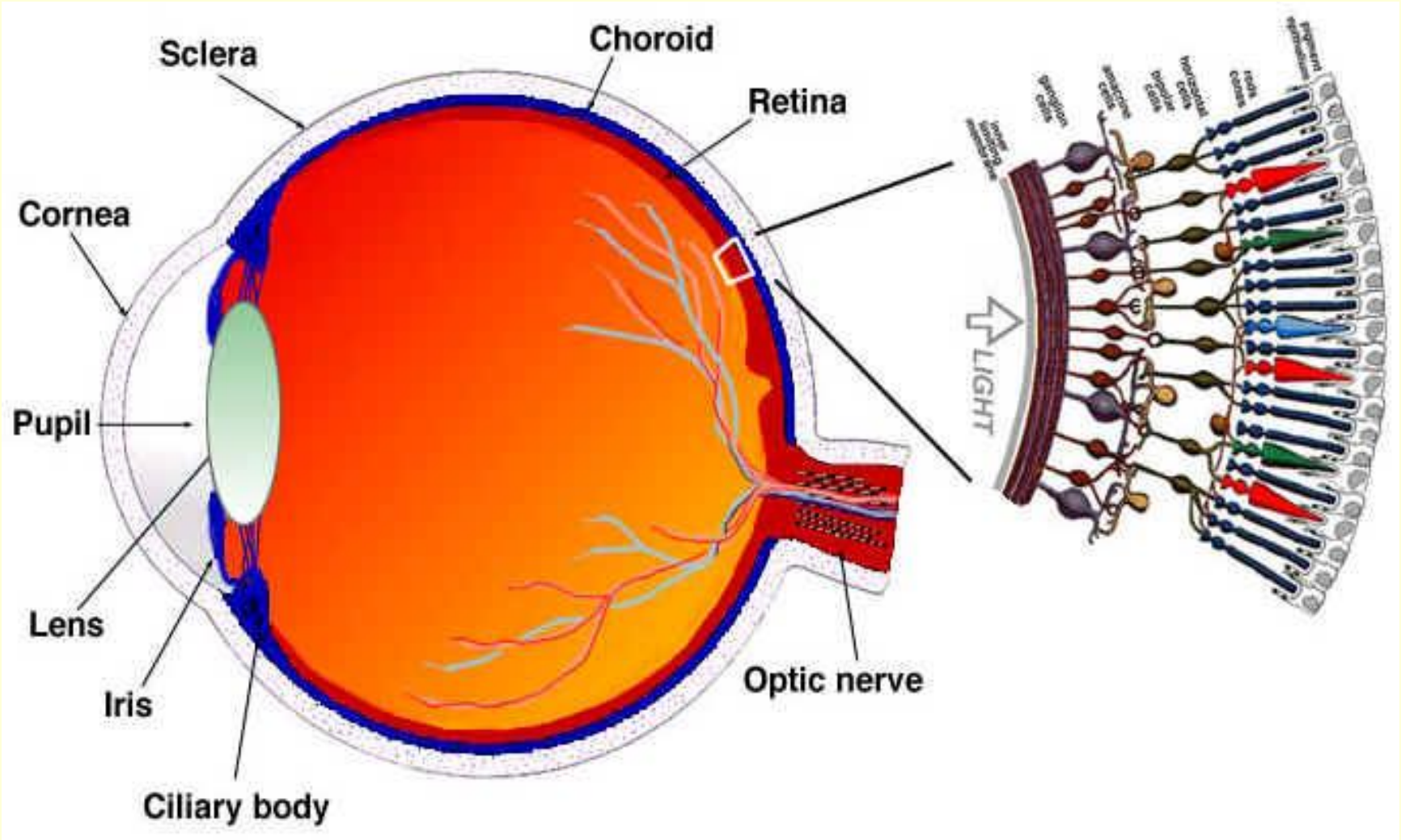
- Together, the eye, optic nerve and visual cortex in the brain (which interprets the signals sent by the optic nerve) deliver and interpret up to **1.5 million** pulse messages **a milli-second**!

- You would need dozens of **supercomputers** to get close to doing the same thing – does that sound like random chance?

Cameras are obviously complex devices with carefully arranged parts that perform a specific function (taking pictures) and are made by really smart people



But if even the most complex cameras are child's play compared to the complexity of the human eye, then who made the eye?



As for the pinnacle of intelligent design, let's talk about the human brain

The Brain – the Pinnacle of Intelligent Design!

- Even more complex than cells and eyes is the human brain, which has as many as **100** to **200 billion** neurons (brain cells), similar to the number of stars in the Milky Way galaxy

- Each neuron is connected to over **10,000** other neurons by a pulsating network of fibers

- These fibers create synapses or pathways between neurons (like roads or streets) for the flow of information between neurons

- The brain has a **million billion** synapses or pathways between neurons (that's **1,000,000,000,000,000** roads and streets between neurons that information can travel down)

The Brain – the Pinnacle of Intelligent Design:

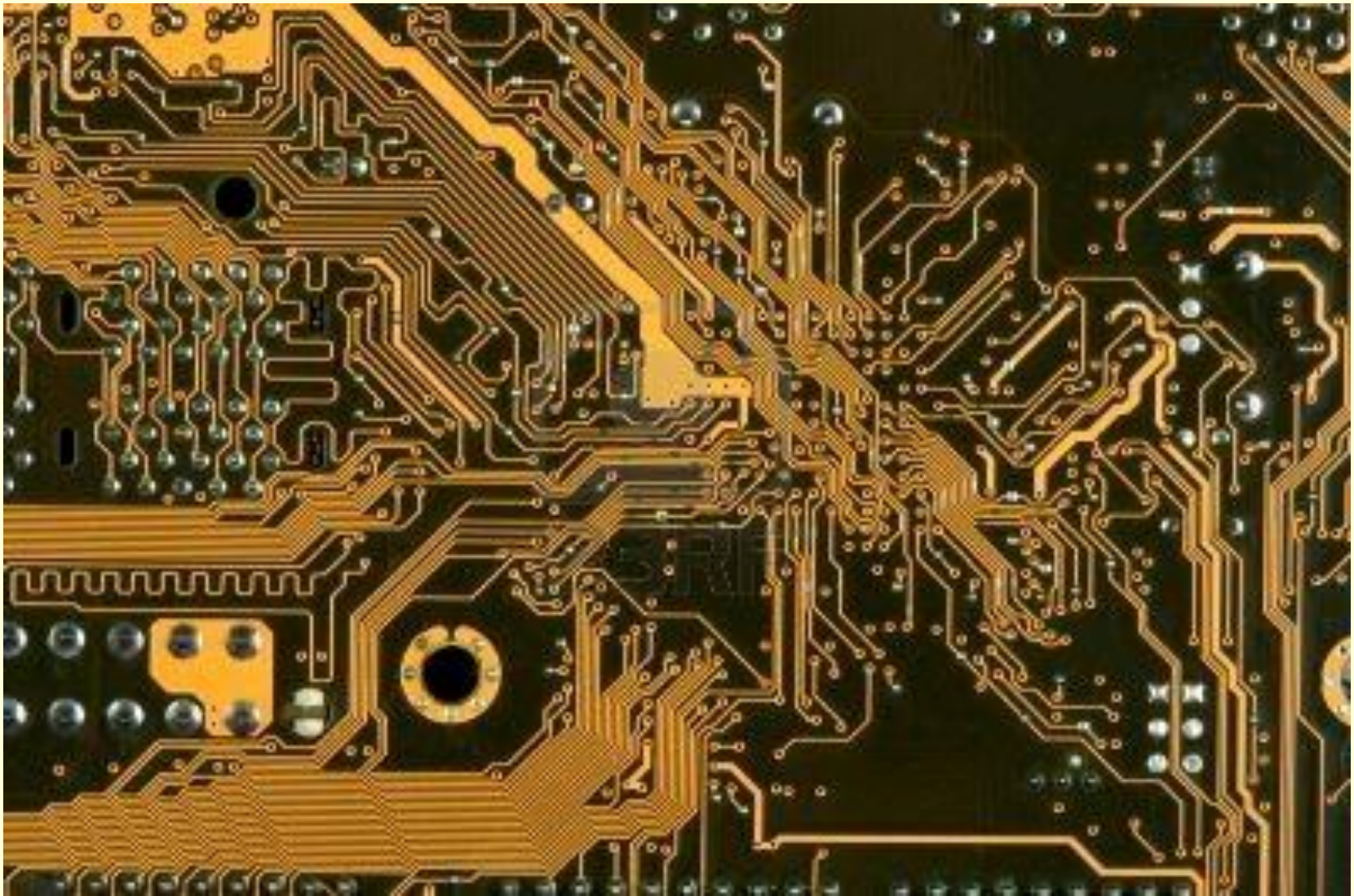
- According to scientists, the synapses constitute a complex wiring system that surpasses by many orders of magnitude the complexity of even the most advanced supercomputers

- The total atoms in the universe is a **1** followed by **100** zeroes

- But the number of different patterns possible in the brain (the number of different ways that information can travel down the brain's roads and streets) is a **1** followed by over **800** zeroes

- This makes the brain, which has **trillions** times **trillions** more patterns than atoms in the universe, by far the most complex object in the known universe

It’s easy to see the high-degree of intricate intelligent design that has been engineered into a computer circuit board to maximize the flow of information



But if even the world's fastest supercomputer pales next to the complexity of the human brain, then who is the great <u>Engineer</u> who designed the brain?

More Complexity in the Human Body:

- Let's go back for a minute to the basic cell. Many scientists think life (i.e., the first primitive cell or building blocks of a cell) began on earth **3.5 to 3.8 billion years ago**

- They claim life then randomly reproduced itself over billions of years with cells multiplying from primitive bacteria into increasingly complex organisms eventually resulting in humans with up to **100 trillion cells**

- As for the complexity in the human body, it's not limited to the eyes and the brain. The average human heart beats about **100,000** times in a day, about **36,000,000** times a year and about **3 billion** times in a person's lifetime

- And while the average piano has 88 keys, all of us have ears that possess **24,000 fibers** comprising a "keyboard" so advanced that it is capable of catching **73,700** vibrations a second

More Complexity in the Human Body:

- And our lungs have a surface area almost the size of a tennis court and inhale over **two million liters** of air every day. On average, you breathe **23,000** times a day and will take about **600 million breaths** during your lifetime

- You also have a body consisting of **206 bones**, wrapped with **650 muscles** and **seven miles** of nerve fibers. One square inch of your skin has **600** pain sensors, **9,000** nerve endings, **100** sweat glands and **3 yards** of blood vessels

- As you consider this staggering complexity, ask yourself why would simple cells multiply over time, almost as if by magic, into elegant structures like brains, eyes, hearts, ears, lungs, bones, muscles and thousands of miles of blood vessels?

- After all, if cells have just been **randomly multiplying** year after year for **billions** of years, then shouldn't the **100 trillion cells** in our bodies have just ended up looking like a **150 pound**, five foot high **blob of cells**

If **Mother Nature** is all we have, then shouldn't **100 trillion cells** just end up like a big pile of dirty laundry. Seems like it's only with **Father God's intelligent design** that we should actually expect to end up with **a person** doing the laundry

Intelligent Design – Biomimetics:

- By the way, design in nature is not just limited to bacteria and our amazingly complex bodies

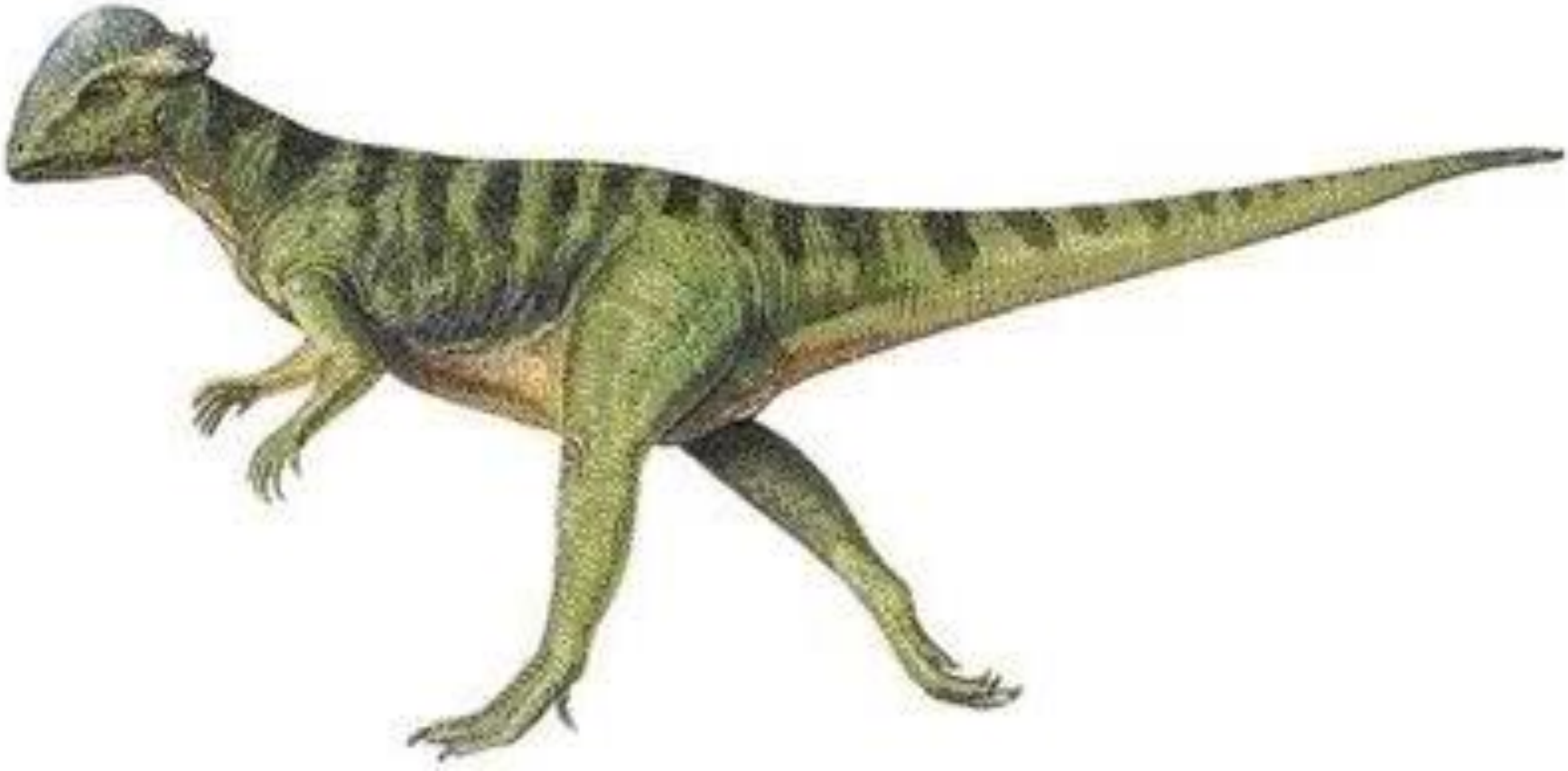
- In fact, there is so much design everywhere that engineers look all throughout nature for design inspiration in a field of study called **biomimetics** ("bio" for life and "mimetics" for mimicking biology)

- One example of turning to "nature" for design inspiration comes from the Wright Brothers, who drew their plans for airplanes from their analysis of the wings of birds

- Another example is the development of Velcro, which came from a man observing the efficiency of burrs sticking to a dog's fur

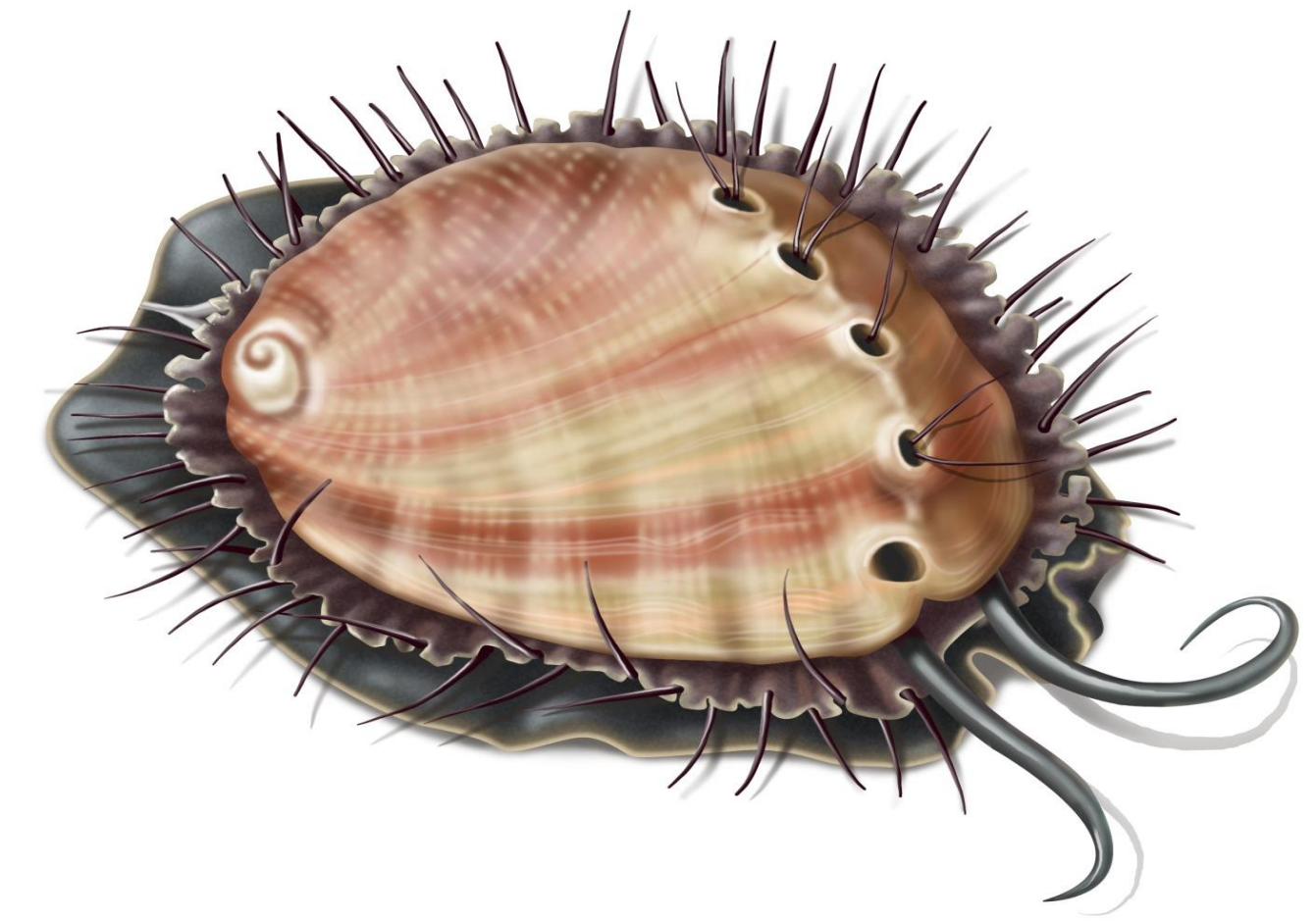
Biomimetics – the King of the Head Butt!

Scientists have discovered that the structure of the skull of the pachycephalosaur (a dome-headed dinosaur) was better than any modern animal skulls for protecting the brain during head-butting attacks, which they say will lead to improved helmet design



Another example – the mighty Abalone!

Scientists have also found that the brick-like tile structure for the shells of abalones (sea-weed eating snails) is the toughest arrangement of tiles theoretically possible, which they say will help develop better body armor for soldiers



The best way to collect water – the Namib Desert Beetle!

Scientists say using the same bumpy architecture as the beetle's back with glass and plastic is the best way to collect water, and will allow them to gather water or other substances, build cooling devices, and even possibly clean up hazardous spills

Biomimetics (more examples):

- Other examples include a robotics group that designed robotic feet that mimic a fly's footing (including the oil-based "glue" that flies secrete) so the robots could climb walls the same way that flies do

- Also, the U.S. Navy is trying to duplicate the way cicadas make noise (they are small insects that can produce sounds of up to **100** decibels)

- The Navy believes this will enable them to make a loud noise using very little power, which will help with remote underwater sensing abilities, ship-to ship communications and rescue operations

- Finally, researchers hope to make better airplane wings by continuing to study the wing structure of some birds that are better than any fighter jet (the birds can turn on a dime in flight by adjusting their wing angle)

Biomimetics (more examples):

- All this complexity lead the Department of Energy, years ago, to declare that "biological systems have **achieved** levels of complexity that are **far beyond** what has been achieved by engineers."

- And it led one scientist to say that, "as is often the case, **Nature** is ahead of the engineers"

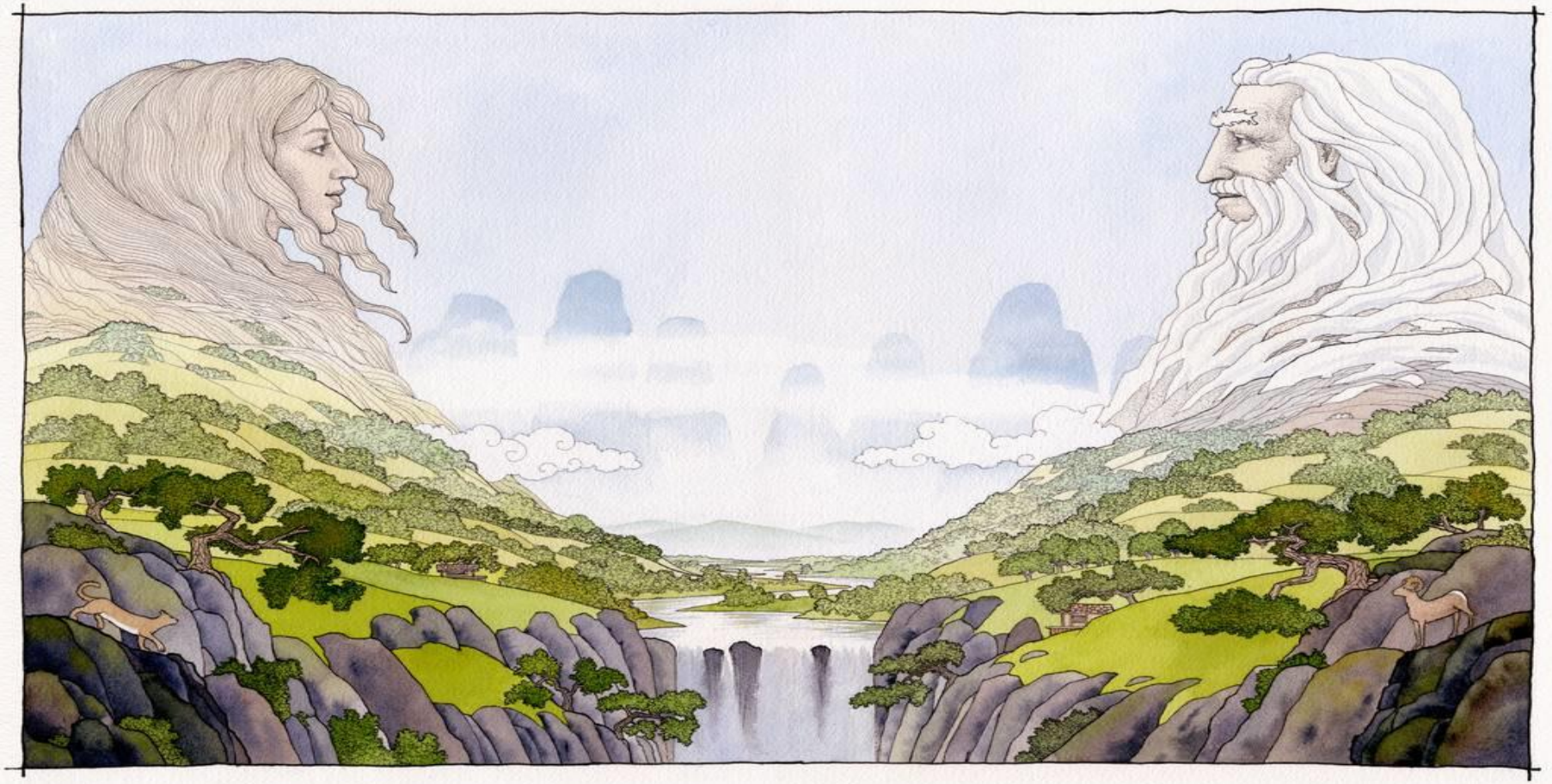
- Another scientist, talking about butterflies that reflect light with structures more complex than any made by man, said that nature always has an extra level of complexity up "**her**" sleeve

- And a researcher when studying DNA (discussed more below) stated:

> "The **sophisticated** tools and techniques **employed by Nature** for **purposeful** storage of information stand in stark contrast to the **primitive** and relatively inefficient means **used by man**."

But why do scientists constantly talk about “nature” as if Mother Nature is actually a real person with God-like super powers responsible for all the design and creative activity we see all around us?

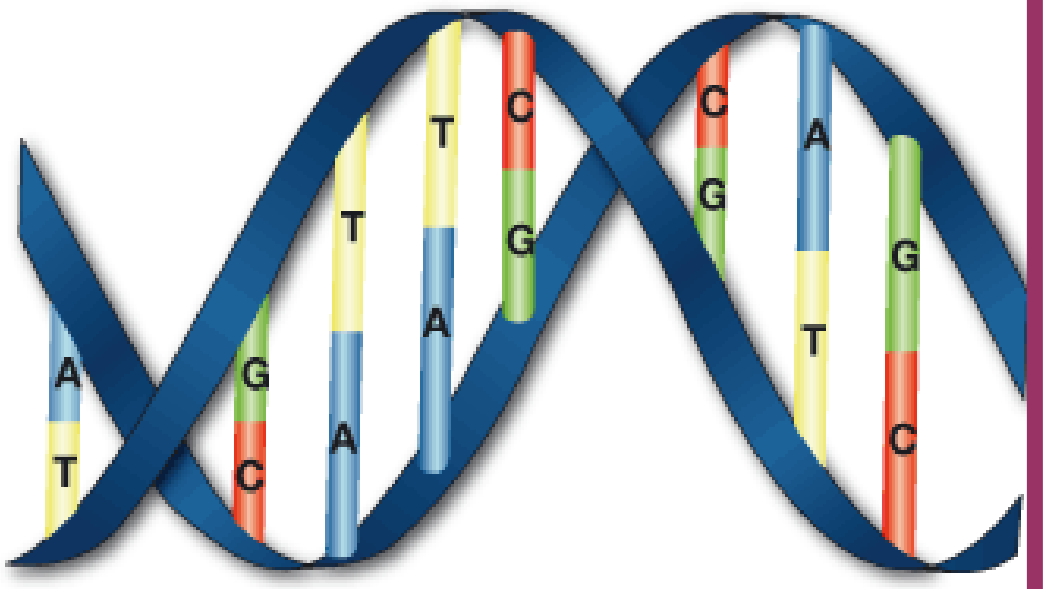
Maybe it's because they know complex design only comes from intelligence (and not random chance), which means the best explanation for the amazing design all throughout the world is not "Mother Nature" (a person who, by the way, doesn't actually exist), but rather an intelligent designer like Father God!



5. Evidence from DNA: Who wrote the Book of Life?

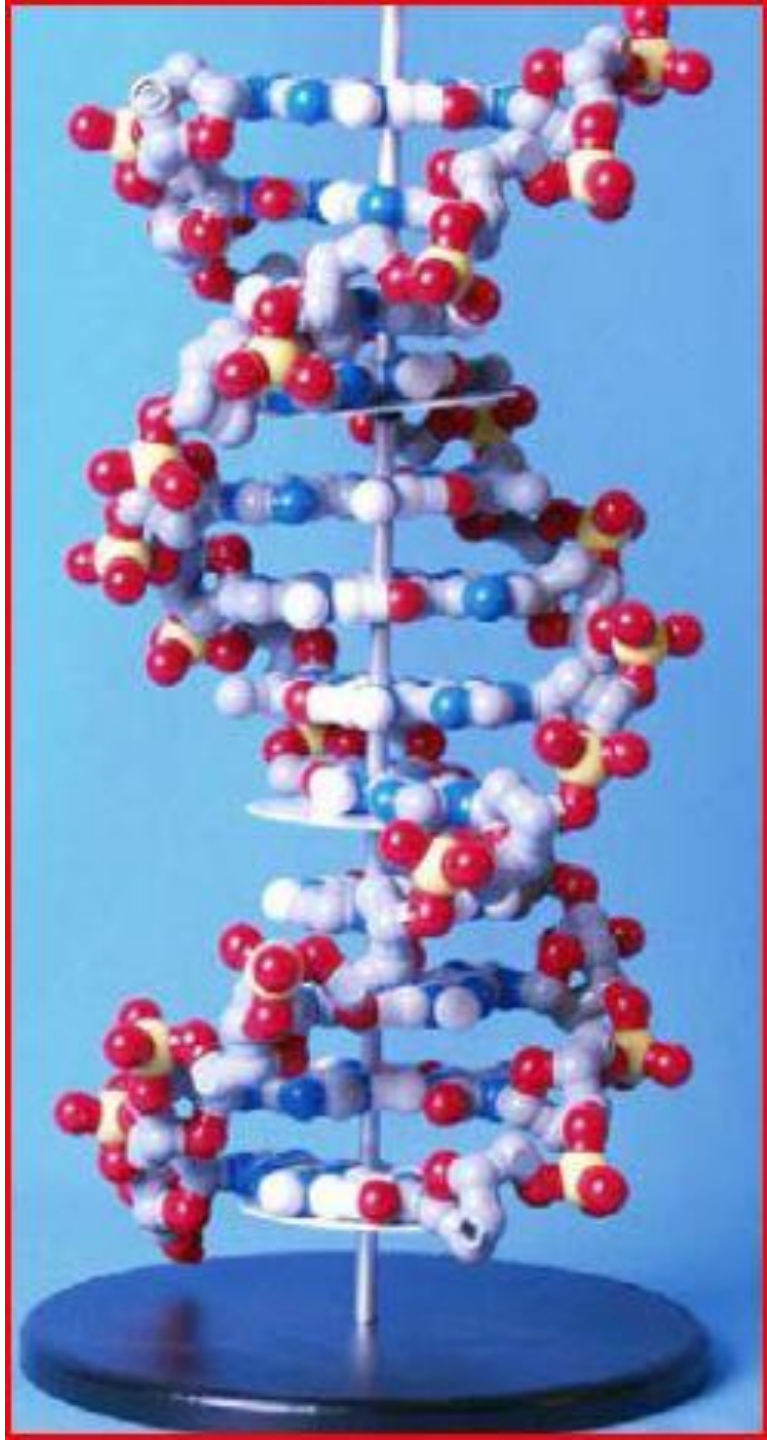
"In the beginning was the Word, and the Word was with God, and the Word was God" (John 1:1)

DNA is a chemical code that uses multiple arrangements of <u>four</u> basic nucleotide sugars to store information



Thymine (Yellow) = T Guanine (Green) = G

Adenine (Blue) = A Cytosine (Red) = C



DNA – the Evidence of Biological Information:

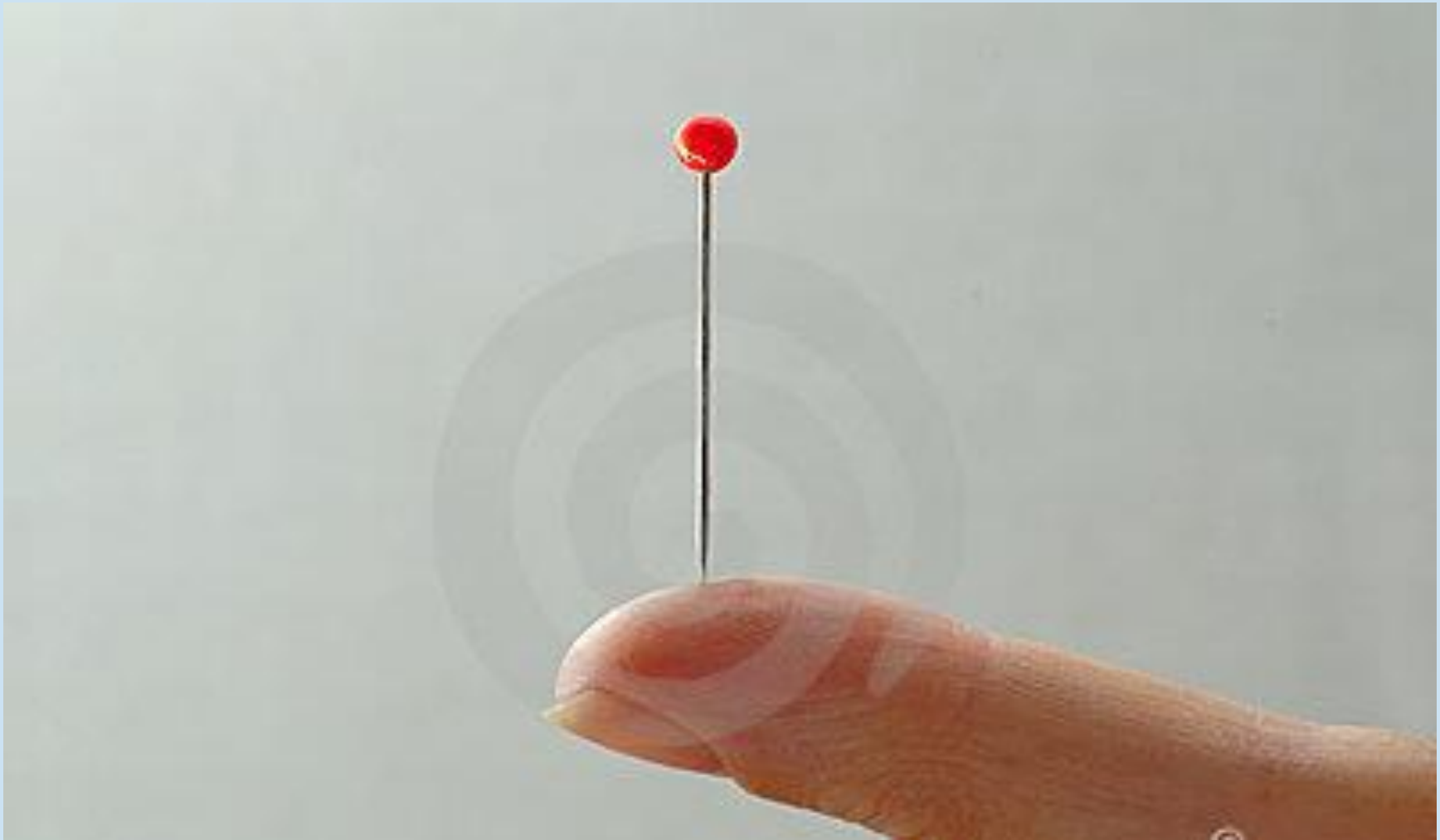
- Life requires information that tells different cells what proteins to make, how to combine to form an eye, a baby's gender, height and weight, basically all of the characteristics of a person

- The information needed for life is stored in a cell's DNA. DNA is the "**software program**" of the cell that contains the instructions that coordinate what each cell must do to function

- In other words, DNA has the same properties as human language and computer code (a complex, specific arrangement of characters, parts or letters that conveys a message)

- Except that when it comes to storing information, DNA is far more powerful than any information-storage device made by man

For example, the **entire internet** could be stored in a few grams of DNA (which is how much just a few **jelly beans** weigh), while all the information in **all the books** in **all the libraries** in the world could be recorded in an amount of DNA less than the size of the **head of a pin**



And all the information needed to build the proteins for **all** of the species that have ever lived (estimated to be about **one billion** species) could be held in just one **teaspoon** of DNA

But most impressively, a roomful of DNA is enough to store every bit of information ever recorded by humans on the entire planet since the beginning of time

DNA – the Evidence of Biological Information:

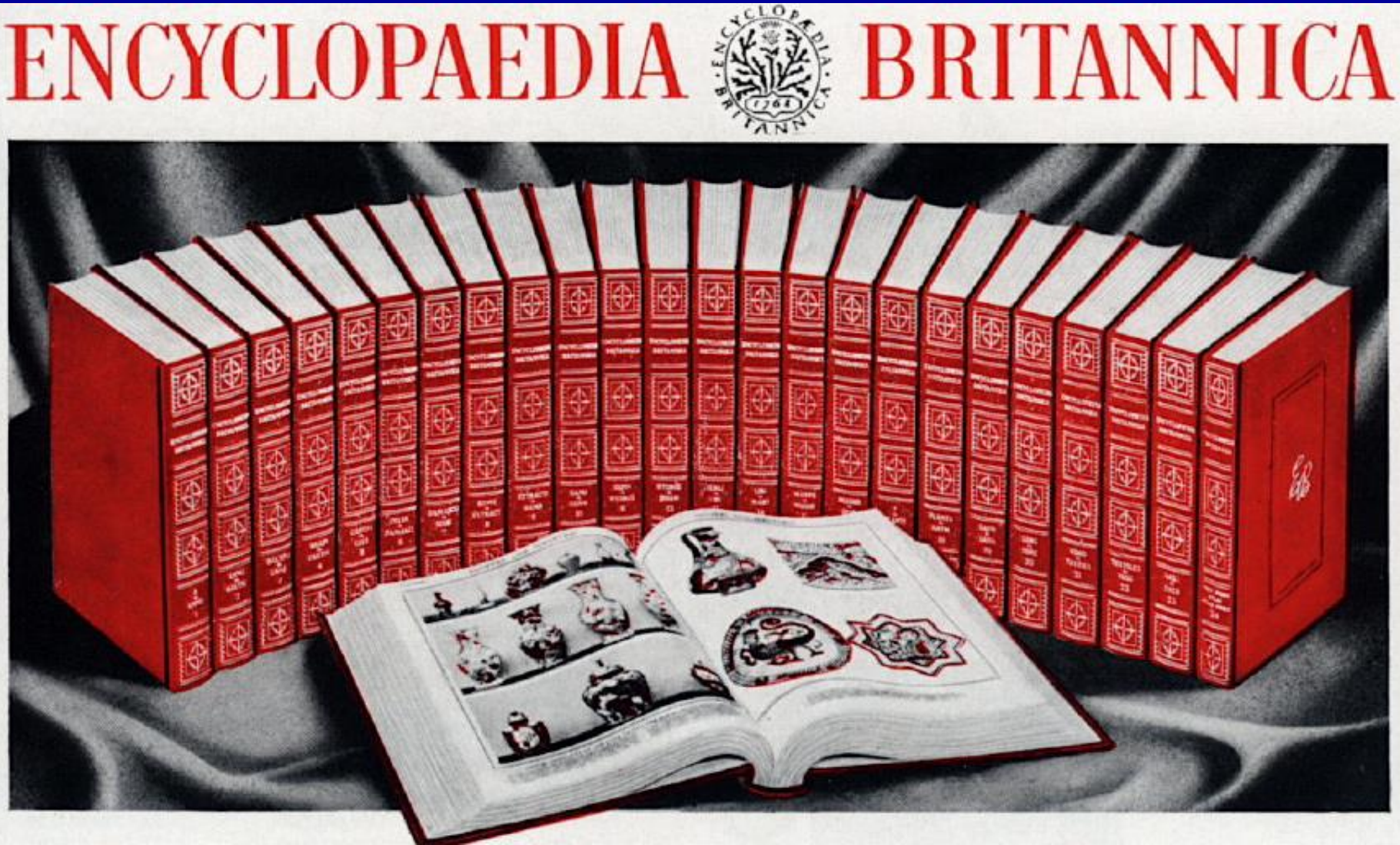
- And while complex software programs might have several million lines of code, the DNA in just **one** cell alone has between **3 to 6 billion** pairs of nucleotide sugars (i.e., the "letters" of DNA code)

- Each cell in your body has approximately **6 feet** of DNA. If you stretched out all the DNA in an adult person end-to-end it would be long enough to make over **200** round-trips to the sun and back

- And DNA is not limited to just complex life. A leading scientist says some species of amoebas (i.e., single-cell organisms) have as much information in their DNA as **1,000** Encyclopedia Britannicas

- Bottom line, even the first life on earth needed DNA information to continue living and reproducing, so where did that information come from?

After all, when we open an encyclopedia and see so much fantastic knowledge



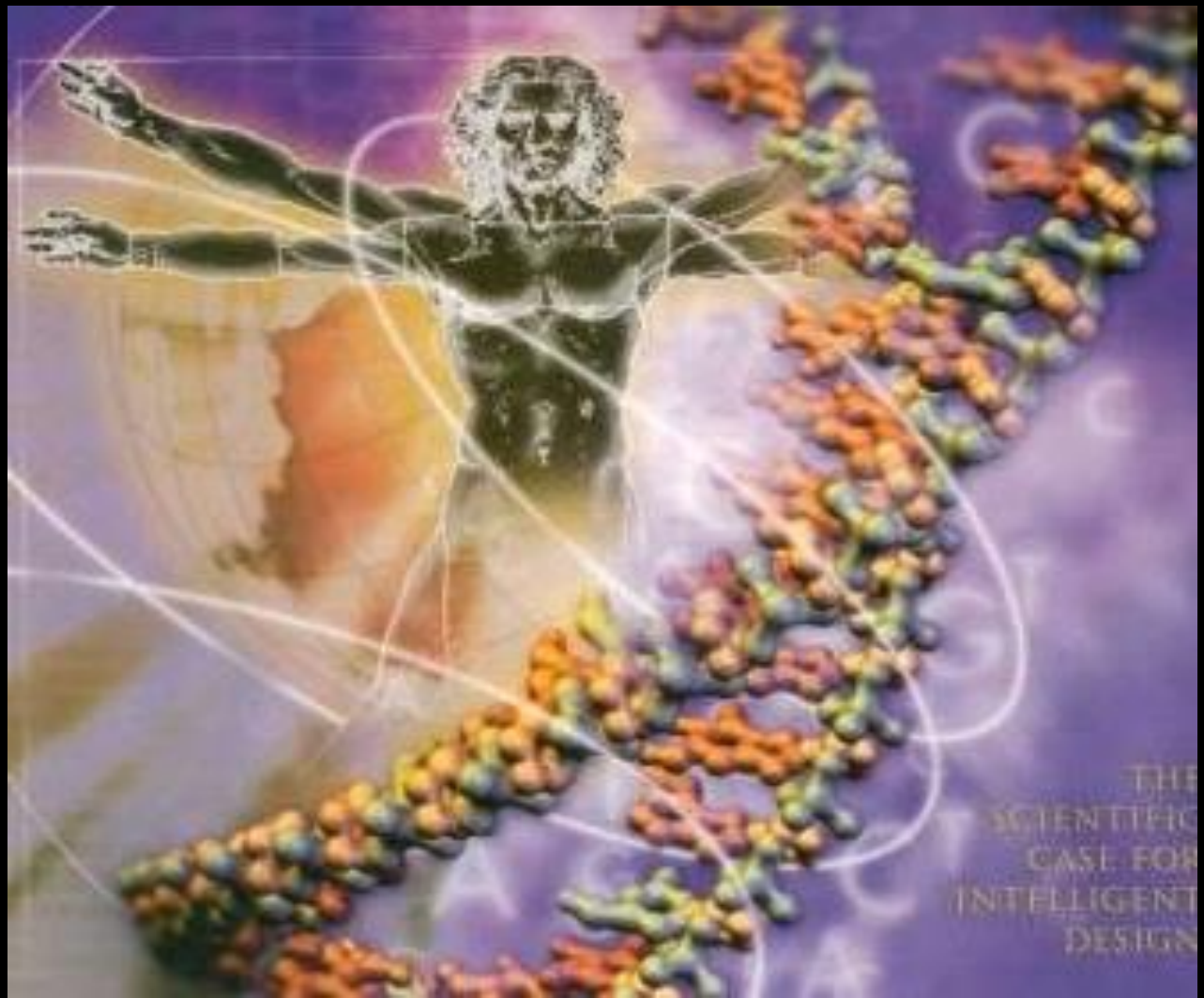
We know that the words and pictures didn't just magically arrange themselves by random chance, but instead a lot of highly educated people wrote down all that **information** in those books

And when we see **millions** of lines of computer code (a binary code consisting of sequences of 1's and 0's) that provide operating instructions to **billions** of electronic devices such as computers, phones and video games

We know they didn’t just get there by Harry Potter waving his magic wand, but instead some intelligent computer programmers spent a long time writing the code line by line in painstaking detail

So if information only comes from **intelligence** and DNA has far more information than all the books combined and is more complex than any computer code, then who wrote the DNA code?

WHO IS THE AUTHOR OF LIFE?



How do you explain Consciousness?

- Guess what, scientists don't know. They have no idea how all that information was programmed into our cells from the very beginning

- In fact, while science is amazing, did you know there are a lot of things it **can't explain**, such as why do people have **a mind** (i.e., a **consciousness**)

- I know **dogs** are **man's best friends** and that we all love talking to our pets, but have you ever tried to have an actual conversation with your dog?

- I'm not talking about giving basic commands (like sit and stop), but an actual back and forth conversation like you would have with your parents, brothers and sisters? No, why not? Because obviously **dogs can't talk**

- But even if a dog **had a voice**, what would he say? Dogs can't reason, they can't think, they can't argue, they can't beg? Why is that?

Because <u>dogs aren't people</u>, that's why. People have minds, we have a consciousness, the ability to think and the ability to create, something that no other species has. Where did that come from? How did we get it?

Your Mind and your Brain are two different things:

- Again, scientists don't know. But we do know from plenty of medical and scientific studies that your **mind** (your consciousness) and your **brain** are two totally separate things that interact with each other

- And studies show that our thoughts begin first in our **consciousness** and then show up in **brain wave scans** (so you have a thought in your mind first, which then produces a reaction in your brain)

- This means **your mind controls your brain**. When you do something crazy, do people say "**ARE YOU OUT OF YOUR BRAIN?**" Of course not. We say "**ARE YOU OUT OF YOUR MIND**!"

- We all know we have minds, but how much does our mind weigh, what color is it, how big is it? We all have minds, but science pretty much doesn't know anything about them except that we have them

But it's not just consciousness that science can't explain. Let me show you. Below is a G.I. Joe action figure (we can call him Joe) and his pet rock (we can call him Ryan)

Are Joe and Ryan Alive?

- If I put a plate of food next to Joe, will he eat it and **suddenly become alive**? What if I sprinkle some water on Joe? Will that magically make him alive or will he still just be **a lifeless doll**?

- What about Joe's pet rock, Ryan. If I add water, will that magically turn Ryan into something alive or will Ryan still just be a rock?

- What if I put Ryan in my garden, add fertilizer and then water him every day for the next **4 billion years**. Will that make him alive or will I just have an old, slimy, wet rock?

- I think we all know that Joe and Ryan aren't alive (they are what we call **inanimate objects**) and there is nothing that anyone can do (not even if you spend the next **4 billion years** trying) that will ever change that

The Origin of Life:

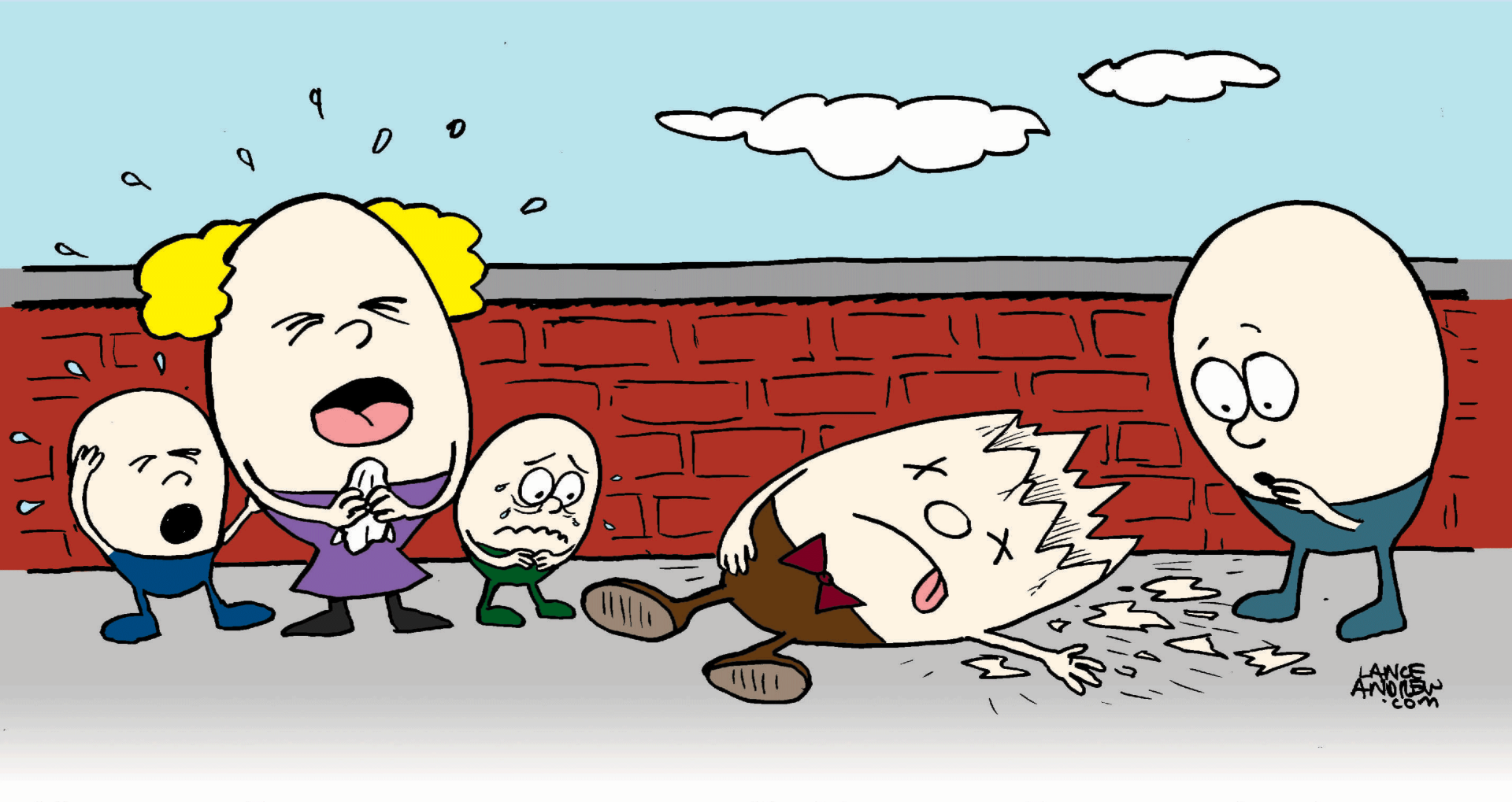
- So it turns out that another thing that science can't explain is **how the first life began**, how we went from inanimate objects like rocks to people

- In fact, **no experiment** using the correct conditions of early Earth has been able to create in the lab the types of amino acids that actually make up the proteins that make up the cells **needed for life**

- After **60** years of **intelligently designed** experiments, scientists still can't repeat what they claim happened by random chance

- As for random chance, one biologist says the odds of even one protein being formed from non-life is **one in one hundred thousand trillion trillion trillion trillion trillion trillion trillion trillion trillion trillion (that's 125 zeroes!)**

And like trying to put Humpty Dumpty back together, this biologist also says the odds a broken-apart cell could reassemble itself are 1 in 10 to the 100,000,000,000th power (i.e., a 1 with 100 billion zeroes after it!)



DNA and the Origin of Life:

- As a result, one Nobel Prize winner in chemistry has said the chance that life "would be generated by accident is **zero**"

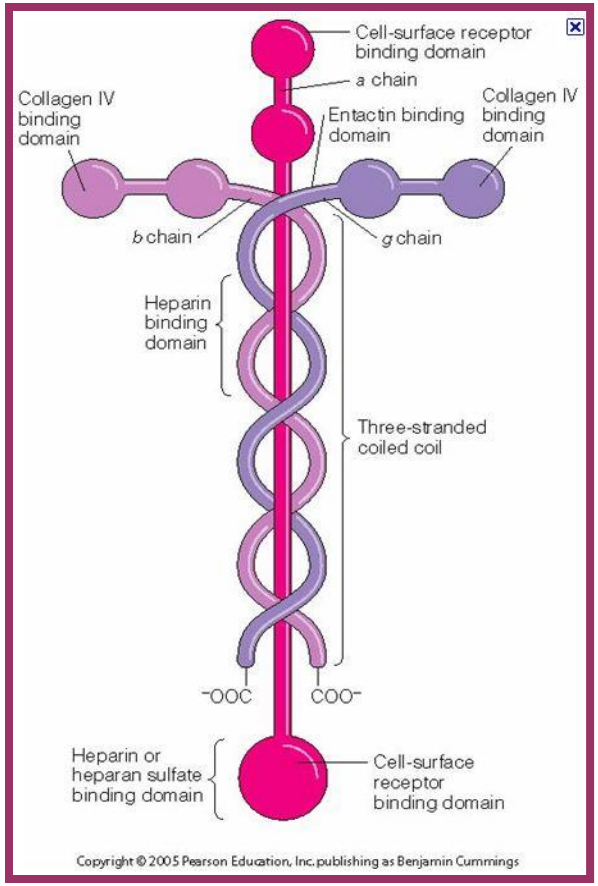
- And some Origin of Life researchers, when faced with the insurmountable odds of life originating on earth by pure chance, have suggested that life may have originated elsewhere and floated here through space

- But while science may be clueless as to the origin of life, the Author of life has left us a clue in the form of **Laminin**, a protein that **binds and holds** the cells of the body **together** (without it, your body can not survive)

- Like a great artist **signing** his work so we'll all know it's him, the **Author** of life has left us His **signature** using Laminin as His pen, so let's check it out as we finish up our scientific investigation

Laminin – the "cross" that holds us together

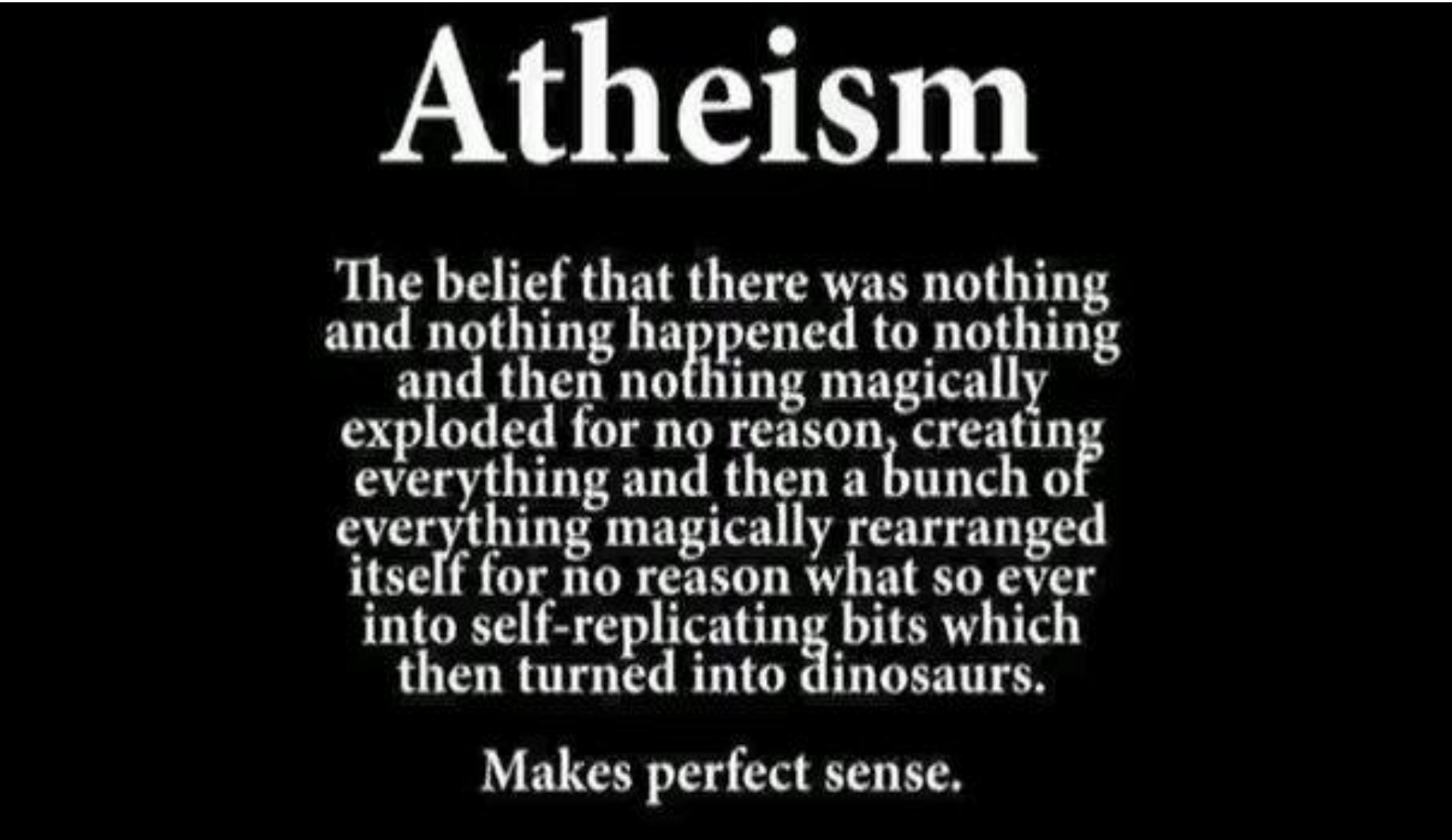
On the left is an actual picture of Laminin and on the right is a scientific diagram of it. Hmm, sure looks familiar – seems pretty obvious whose signature that is!



Okay, now that we've finished our investigation, it's time to weigh all of the scientific evidence to see whether or not the scales are in favor of God

Surprisingly, despite the evidence that an infinite power and intelligence must have created the universe and everything in it, many people still claim that God had nothing to do with it

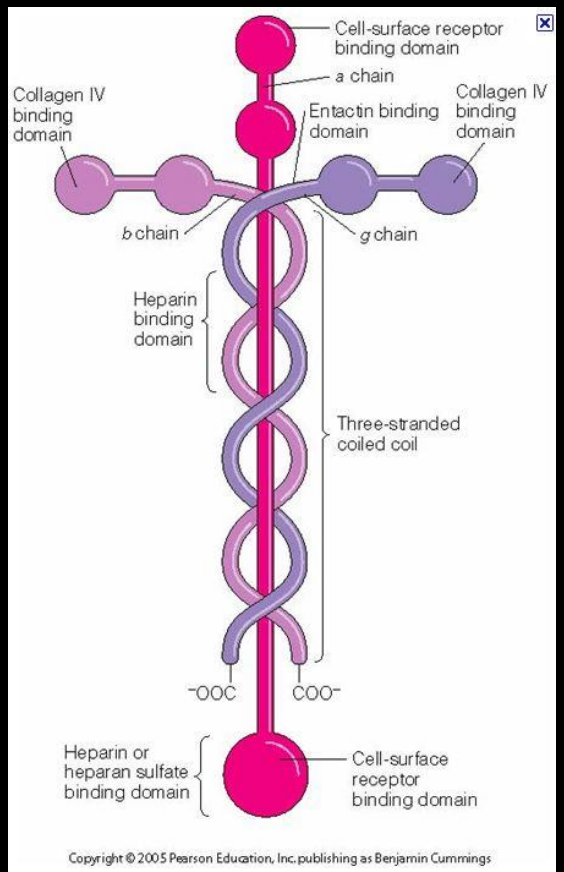
But then again, let's take a closer look at their explanation for creation



DOES THAT SEEM REASONABLE TO YOU?

Or do you agree with me that the explanation that makes far more sense is that the

Plus, we just saw that all of our bodies are held together by Laminin (a protein that looks just like a cross), and the Bible tells us in Colossians 1:16-18 that the entire universe is held together by Jesus, which means that God has used both nature (which is "natural revelation") and the Bible (which is "special revelation") to clearly show us the same ultimate truth behind his creation!



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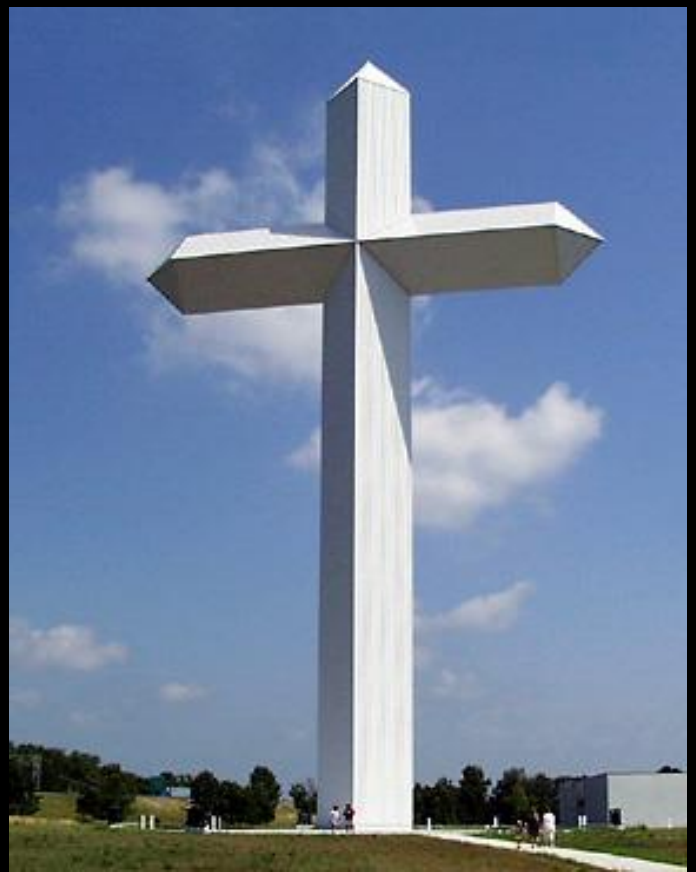

And not just the ultimate truth, but the ultimate Person and the Author of all Life!