Ode to E Pluribus Unum for Sunday September 24 2023

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Venus, Moon, and the Smoking Mountain

Image Credit & Copyright: Luis Miguel Meade Rodríguez

Venus has returned as a brilliant morning star. From a window seat on a flight to Mexico City, the bright celestial beacon was captured just before sunrise in this astronomical snapshot, taken on September 12.

Venus, at the upper right, shared the early predawn skies with an old crescent Moon. Seen from this stratospheric perspective, both mountain peaks and clouds appear in silhouette along a glowing eastern horizon.

The dramatic, long, low cloud bank was created by venting from planet Earth's active volcano Popocatépetl.

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AI Detects Eye Disease and Risk of Parkinson’s from Retinal Images

Scientists have developed an artificial intelligence (AI) tool capable of diagnosing and predicting the risk of developing multiple health conditions — from ocular diseases to heart failure to Parkinson’s disease — all on the basis of people’s retinal images..

https://www.nature.com/articles/d41586-023-02881-2

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Cement-Based Supercapacitor Energy Storage System

A house with a foundation made of this material could store a day's worth of energy produced by solar panels or windmills, and allow it to be used whenever it's needed.
(Courtesy: Franz-Josef Ulm, Admir Masic and Yang-Shao Horn)

A new cost-effective and efficient supercapacitor made from carbon black and cement could store a day's worth of energy in the concrete foundation of a building or provide contactless recharging for electric cars as they travel across it. The device could also facilitate the use of renewable energy sources such as solar, wind and tidal power, according to the researchers at the Massachusetts Institute of Technology (MIT) and the Wyss Institute, both in the US, who developed it.

https://bit.ly/3qOCE78

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Sodium-ion Batteries Challenge Lithium-ion

A look at some of the reasons for using sodium-ion batteries in material handling equipment.

https://bit.ly/3ZI80Pk

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Stray Cats

Stray Cats is an American rockabilly band formed in 1979 by guitarist and vocalist Brian Setzer, double bassist Lee Rocker, and drummer Slim Jim Phantom in the Long Island town of Massapequa, New York.

In 1983, the Stray Cats began recording their third (second U.S.) studio album Rant N' Rave with the Stray Cats. Released in August 1983, critics generally viewed Rant N' Rave favorably, citing the band's tributes to 1950s rock 'n' roll legends such as Vincent and Bo Diddley. Musical and personal conflicts began to emerge in the ways that the individual members handled their new-found success. In 1984 at the heart of their success, the group went separate ways

https://youtu.be/vEtbfzMLVWU?si=8Z9b0OGAm04D5W2d

https://youtu.be/0RxBHRZpIdg?si=rWlpWZjWlx0dEQJF

Wonder about Rockabilly? Wonder no more.

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The Darwin Awards are given every year to bestow upon [the remains of] those individuals, who through single-minded self-sacrifice, have done the most to remove undesirable elements from the human gene pool.

1) Los Angeles, CA. Ani Saduki, 33, and his brother decided to remove a bees nest from a shed on their property with the aid of a pineapple. A pineapple is an illegal firecracker which is the explosive equivalent of one-half stick of dynamite. They ignited the fuse and retreated to watch from inside their home, behind a window some 10 feet away from the hive/shed.

The concussion of the explosion shattered the window inwards, seriously lacerating Ani. Deciding Mr. Saduki need stitches, the brothers headed out to go to a nearby hospital. While walking towards their car, Ani was stung three times by the surviving bees. Unbeknownst to either brother, Ani was allergic to bee venom, and died of Suffocation enroute to the hospital.

(# 2) Derrick L. Richards, 28, was charged in April in Minneapolis with third-degree murder in the death of his beloved cousin, Kenneth E. Richards. According to police, Derrick suggested a game of Russian roulette and put a semiautomatic pistol (instead of the more traditional revolver) to Ken's head and fired.

(# 3) Phillipsburg, NJ. An unidentified 29-year-old male choked to death on a sequined pastie he had orally removed from an exotic dancer at a local establishment. "I didn't think he was going to eat it," the dancer identified only as "Ginger" said, adding "He was really drunk."

(# 4) In February, according to police in WINDSOR, ONT., Daniel Kolta, 27, and Randy Taylor, 33, died in a head-on collision, thus earning a tie in the game of chicken they were playing with their snowmobiles.

(# 5) Moscow, Russia-A drunk security man asked a colleague at the Moscow bank they were guarding to stab his bulletproof vest to see if it would protect him against a knife attack. It didn't, and the 25-year-old guard died of a heart wound. (It's good to see the Russians getting into the spirit of the Darwin Awards.)

(# 6) In France, Jacques LeFevrier left nothing to chance when he decided to commit suicide. He stood at the top of a tall cliff and tied a noose around his neck. He tied the other end of the rope to a large rock. He drank some poison and set fire to his clothes. He even tried to shoot himself at the last moment. He jumped and fired the pistol. The bullet missed him completely and cut through the rope above him. Free of the threat of hanging, he plunged into the sea. The sudden dunking extinguished the flames and made him vomit the poison. He was dragged out of the water by a kind fisherman and was taken to a hospital, where he died of hypothermia.

(# 7) Renton, Washington, USA. On February 3, a Renton, Washington man tried to commit a robbery. This was probably his first attempt, as suggested by the fact that he had no previous record of violent crime, and by his terminally stupid choices as listed below:

- The target was H&J Leather & Firearms, a gun shop.
- The shop was full of customers, in a state where a substantial portion of the adult population is licensed to carry concealed handguns in public places.
- To enter the shop, he had to step around a marked Police patrol car parked at the front door.
- An officer in uniform was standing next to the counter, having coffee before reporting to duty.

Upon seeing the officer, the would-be robber announced a holdup and fired a few wild shots. The officer and a clerk promptly returned fire, removing him from the gene pool. Several other customers also drew their guns, but didn't fire. No one else was hurt.

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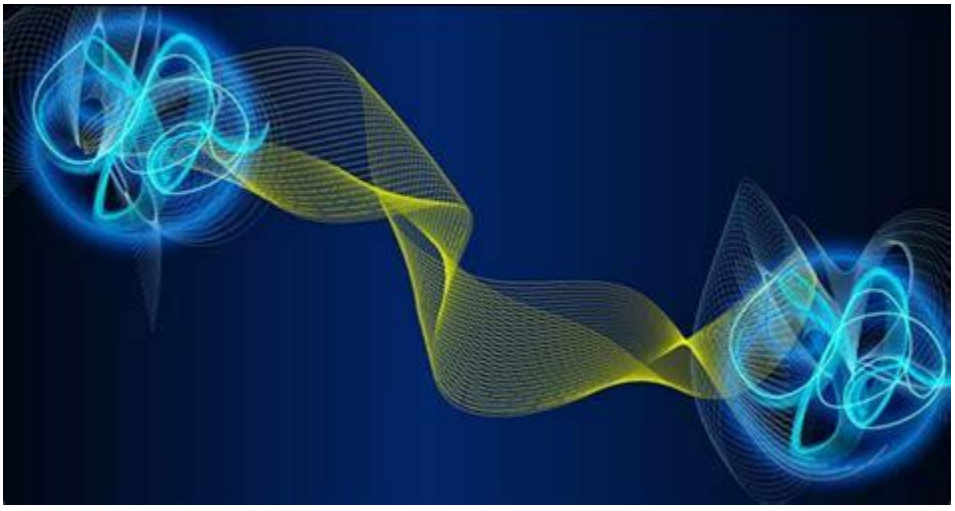
What Is Entanglement and Why Is It Important?



Entanglement is at the heart of quantum physics and future quantum technologies. Like other aspects of quantum science, the phenomenon of entanglement reveals itself at

very tiny, subatomic scales. When two particles, such as a pair of photons or electrons, become entangled, they remain connected even when separated by vast distances. In the same way that a ballet or tango emerges from individual dancers, entanglement arises from the connection between particles. It is what scientists call an emergent property.

https://scienceexchange.caltech.edu/topics/quantum-science-explained/entanglement

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The Best Free Tourist Attractions in Every Country and State

The worst thing to happen on a vacation is to shell out a bunch of money on a hyped-up tourist attraction, only to realize that the place you've arrived at is totally overrated. Now you've spent precious time and money to stand around in crowds and feel disappointed. Luckily, for every lackluster destination, there is also an amazing—and free—attraction to check out as well.

https://bit.ly/3RfKl0G

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Better They Said It Than I

By all means, marry. If you get a good wife, you'll become happy; if you get a bad one, You'll become a philosopher.
Socrates

I was married by a judge. I should have asked for a jury.
Groucho Marx

My wife has a slight impediment in her speech. Every now and then she stops to breathe.
Jimmy Durante

I have never hated a man enough to give his diamonds back.
Zsa Zsa Gabor

Only Irish coffee provides in a single glass all four essential food groups: Alcohol, caffeine, sugar and fat.
Alex Levine

My luck is so bad that if I bought a cemetery, people would stop dying.
Rodney Dangerfield

Money can't buy you happiness .... But it does bring you a more pleasant form of misery.
Spike Milligan

Until I was thirteen, I thought my name was SHUT UP .
Joe Namath

I don't feel old. I don't feel anything until noon. Then it's time for my nap.
Bob Hope

I never drink water because of the disgusting things that fish do in it.
W. C. Fields

We could certainly slow the aging process down if it had to work its way through Congress.
Will Rogers

Don't worry about avoiding temptation. As you grow older, it will avoid you.
Winston Churchill

Maybe it's true that life begins at fifty, but everything else starts to wear out, fall out, or spread out.
Phyllis Diller

By the time a man is wise enough to watch his step, he's too old to go anywhere.
Billy Crystal

And the cardiologist's diet: if it tastes good spit it out.

May your troubles be less, may your blessings be more, and may nothing but happiness come through your door.

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Flash Mob with the Lundaland Philharmonic Orchestra

https://youtu.be/k52kVVkQp5A

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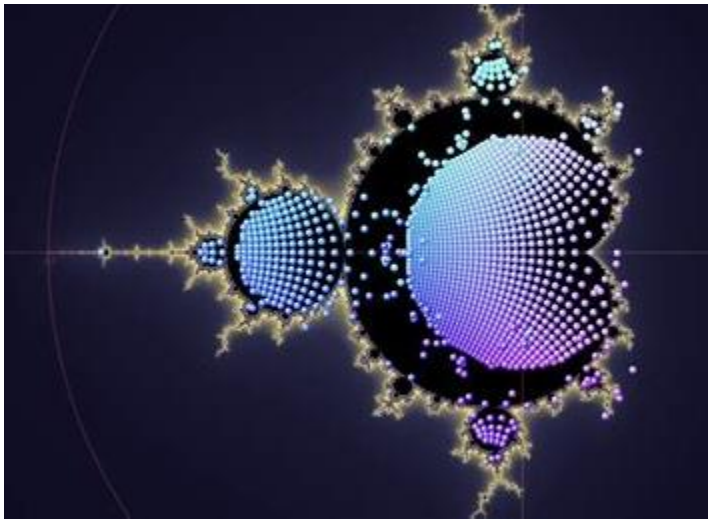
The Complete Idiot's Guide to the Mandelbrot Set



https://youtu.be/gfVmtaOUER8

*Work with **z(n+1) = z(n)^2 + c**...or just enjoy.*

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Frasier Deals with a Serious Issue in the Nation These Days

https://youtu.be/OiIBwR0vujg?t=3

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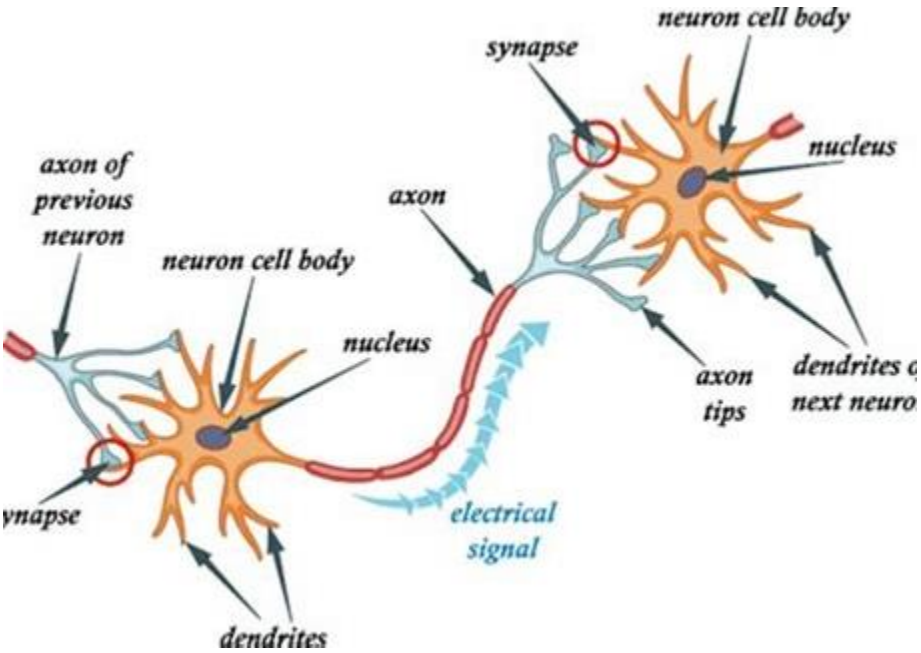
Newly Discovered Trigger of Parkinson's Upends Common Beliefs.

Damage starts much earlier than the death of dopamine neurons, scientists report.



CHICAGO --- A new Northwestern Medicine study challenges a common belief in what triggers Parkinson's disease.

Degeneration of dopaminergic neurons is widely accepted as the first event that leads to Parkinson's. But the new study suggests that a dysfunction in the neuron's synapses — the tiny gap across which a neuron can send an impulse to another neuron — leads to deficits in dopamine and precedes the neurodegeneration.

Parkinson's disease affects 1% to 2% of the population and is characterized by resting tremor, rigidity and bradykinesia (slowness of movement). These motor symptoms are due to the progressive loss of dopaminergic neurons in the midbrain.

The findings, which was published Sept. 15 in Neuron, open a new avenue for therapies, the scientists said.

"We showed that dopaminergic synapses become dysfunctional before neuronal death occurs," said lead author Dr. Dimitri Krainc, chair of neurology at Northwestern University Feinberg School of Medicine and director of the Simpson Querrey Center for Neurogenetics. "Based on these findings, we hypothesize that targeting dysfunctional synapses before the neurons are degenerated may represent a better therapeutic strategy."

The study investigated patient-derived midbrain neurons, which is critical because mouse and human dopamine neurons have a different physiology and findings in the mouse neurons are not translatable to humans, as highlighted in Krainc's research recently published in Science.

Northwestern scientists found that dopaminergic synapses are not functioning correctly in various genetic forms of Parkinson's disease. This work, together with other recent studies by Krainc's lab, addresses one of the major gaps in the field: how different genes linked to Parkinson's lead to degeneration of human dopaminergic neurons.

Neuronal recycling plant

Imagine two workers in a neuronal recycling plant. It's their job to recycle mitochondria, the energy producers of the cell, that are too old or overworked. If the dysfunctional mitochondria remain in the cell, they can cause cellular dysfunction. The process of recycling or removing these old mitochondria is called mitophagy. The two workers in this recycling process are the genes Parkin and PINK1. In a normal situation, PINK1 activates Parkin to move the old mitochondria into the path to be recycled or disposed of.

It has been well-established that people who carry mutations in both copies of either PINK1 or Parkin develop Parkinson's disease because of ineffective mitophagy.

The story of two sisters whose disease helped advance Parkinson's research

Two sisters had the misfortune of being born without the PINK1 gene because their parents were each missing a copy of the critical gene. This put the sisters at high risk

for Parkinson's disease, but one sister was diagnosed at age 16, while the other was not diagnosed until she was 48.

The reason for the disparity led to an important new discovery by Krainc and his group. The sister who was diagnosed at 16 also had partial loss of Parkin, which, by itself, should not cause Parkinson's.

"There must be a complete loss of Parkin to cause Parkinson's disease. So, why did the sister with only a partial loss of Parkin get the disease more than 30 years earlier?" Krainc asked.

As a result, the scientists realized that Parkin has another important job that had previously been unknown. The gene also functions in a different pathway in the synaptic terminal — unrelated to its recycling work— where it controls dopamine release. With this new understanding of what went wrong for the sister, Northwestern scientists saw a new opportunity to boost Parkin and the potential to prevent the degeneration of dopamine neurons.

"We discovered a new mechanism to activate Parkin in patient neurons," Krainc said. "Now, we need to develop drugs that stimulate this pathway, correct synaptic dysfunction and hopefully prevent neuronal degeneration in Parkinson's."

The first author of the study is Pingping Song, research assistant professor in Krainc's lab. Other authors are Wesley Peng, Zhong Xie, Daniel Ysselstein, Talia Krainc, Yvette Wong, Niccolò Mencacci, Jeffrey Savas, and D. James Surmeier from Northwestern and Kalle Gehring from McGill University.

The title of the article is "*Parkinson's disease linked parkin mutation disrupts recycling of synaptic vesicles in human dopaminergic neurons*."

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Won't this lead to increased landfill gas.

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The Future of U.S. Train Travel Is Here—and it's Not on Amtrak

Brightline is already running routes in Florida and will soon break ground on a high-speed line from Las Vegas to LA. It could finally be the boon rail advocates have been hoping for.

https://bit.ly/3sAxX12

Nor will it be Moonbeam's Train to Nowhere

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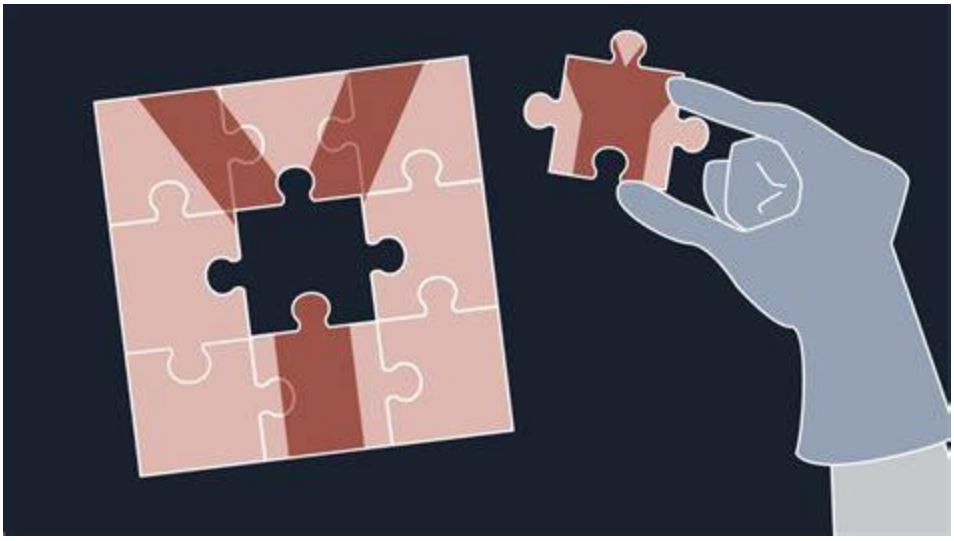
The Y Chromosome's Genetic Puzzle Is Finally Complete



The new research may help scientists learn more about the evolution of the Y chromosome, Phillippy says. And eventually, studying its genes and their variants may lead to a better understanding of fertility and treatments for infertility, he says, but such medical applications are probably years away.

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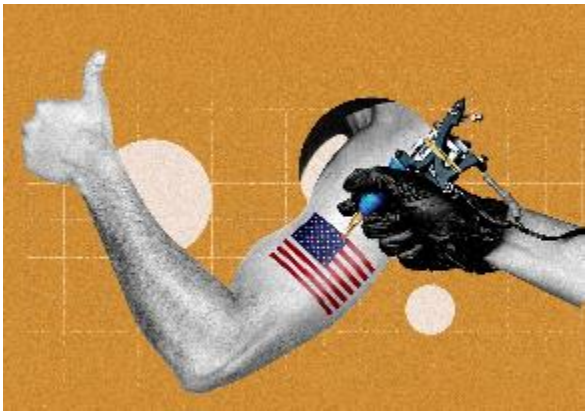
Poll: 32% of People in the US Have at Least 1 Tattoo

Major companies have only recently started to adapt their tattoo policies in an effort to attract new employees.



Because they do. Nearly one-third of people in the US say they have a tattoo, and 22% say they have more than one, according to a Pew Research Center survey published this week.

Having ink is common across all genders, races, and socioeconomic levels, but there are notable trends.

- More women (38%) have at least one tattoo than men (27%).
- Over half of lesbian, gay, or bisexual Americans have at least one tattoo, compared to 31% of straight Americans.
- Youngsters under 30 are more likely to have a tattoo (41%) than people 65 and older (13%).

Major companies have only recently started to adapt their tattoo policies to attract new employees. Within the last two years, Disney, UPS, and Virgin Atlantic reversed their bans on visible tattoos at work. Even the US Army, which didn't allow soldiers to have tattoos until 2015, eased its bans on hand and neck tattoos last year.

Big picture: There's a lot of money in getting…and then getting rid of…those leaping dolphin lower back tats. The tattoo industry is expected to hit $3.9 billion by 2030, according to Fortune Business Insights, and the booming tattoo removal industry is set to jump from $478 million in 2019 to $795 million in 2027, according to Allied Market Research.

health aspects of tattoos.

Economic penalty of tattoos.

Pew Research Center survey.

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Rhapsody in Blue Debut in the 1945 Warner Film

Rhapsody in Blue is a 1945 American biographical film about composer and musician George Gershwin, released by Warner Brothers.

Robert Alda stars as Gershwin, with Joan Leslie, Alexis Smith, Hazel Scott, and Anne Brown also star, while Irving Rapper directs. The film was released in the United States on September 22, 1945. Production background

https://1funny.com/rhapsody-in-blue-1945-rhapsody-in-blue-debut/

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Archer Wins $142 Million USAF Contract for its Midnight eVTOLs

Image: Archer Aviation

Electronic Vertical Takeoff and Landing (eVTOL) hopeful Archer Aviation has announced a $142 million contract with the U.S. Air Force to develop a military version of its Midnight "air taxi" aircraft. According to Reuters, Archer stock catapulted by 33 percent after the announcement. California-based Archer successfully completed final assembly of the first Midnight eVTOL in May. Plans call for the aircraft to carry a pilot and four passengers up to 100 miles.

According to the Reuters report, the U.S. Department of Defense (DoD) has been working with Archer since 2021 as part of the USAF AFWERX Agility Prime program "to assess how eVTOL technologies might fit into emerging platforms for the Air Force and other U.S. military branches."

The Air Force defines the AFWERX mission as: "to accelerate agile and affordable capability transitions by teaming innovative technology developers with Airman and Guardian talent." The program is described as a technology directorate from the Air Force Research Laboratory (AFRL) and the innovation arm of the Air Force. It is meant to stimulate strategic "teaming" among elements of academia, industry and the investment community, as well as interagency and international partners.

According to reports, Archer took the wraps off its Midnight air vehicle last November. Payload is expected to be more than 1,000 pounds, with back-to-back 20-mile trips planned. Ten minutes' charging time is anticipated between trips. Archer said it expects FAA certification in 2024, with hopes for an entry into commercial service the following year. At a cruise altitude of 2,000 feet above the surface, the Midnight's noise signature is expected to be 45 dBA, said to be "1,000 times quieter than a helicopter."

Col. Tom Meagher, the lead for AFWERX Agility Prime programs, said in a statement, "Our contracts with Archer Aviation provide the opportunity to play a role in ensuring

from the onset, and as the technology evolves, that we unlock the many benefits these aircraft have to offer the U.S. military."

Archer CEO Adam Goldstein in a statement, "It's clear that the development and commercialization of eVTOL technology continues to remain a national priority." He added that the $142 million contract also includes pilot training and a maintenance program, and that the six aircraft to be delivered to the USAF will be used for logistics and rescue, not combat missions.

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The Sanddorn Balance

Miyoko Shida Rigolo

She is a Japanese woman whose name is Miyoko Shida Rigolo. She is 52 years old and has taken the last name of her mentor, Rigolo. Her performance is called "The Sanddorn Balance." The only props are withered ribs of date and coconut palm leaves plus one feather.

https://youtu.be/jSDGaQO4ssk?t=10

I don't plan to try this at home…or anywhere else.

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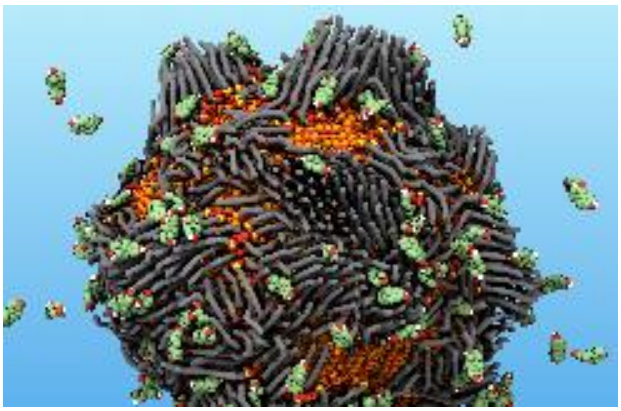
Magnetic 'Rusty' Nanoparticles Pull Estrogen Out of Water

Iron oxide particles trap estrogen hormones, possibly limiting harm to aquatic life



Iron oxide nanoparticles (one illustrated, orange) coated with phosphonic acid molecules (gray) can capture estrogen hormones (green) from water samples.
dustin vivod and dirk zahn/computer chemistry center/friedrich-alexander-universität erlangen-nürnberg

A new "smart rust" could one day help pull pollutants out of waterways, leaving cleaner water behind.

Researchers adorned tiny particles of iron oxide, better known as rust, with "sticky" molecules that grab on to estrogen and similar hormones in water samples. A magnet can then remove both the particles and the trapped pollutants from the water, materials scientist Lukas Müller reports August 16 in San Francisco at a meeting of the American Chemical Society.

The new technology could potentially limit excess estrogen's harmful effects on animals, especially those that live in waterways.

With the nanoparticles, "we are able … to clean very different kinds of environmental pollutants," says Müller, of Friedrich-Alexander-Universität Erlangen-Nürnberg in Germany.

Estrogen hormones typically enter waterways through humans' and other animals' waste (SN: 1/2/02). Even low concentrations can have harmful chronic effects on aquatic life, like higher instances of cancer or reproductive issues, says Konrad Wojnarowski, a biologist at Ludwig-Maximilians-Universität München who was not involved in the study. Wastewater treatment plants can remove some estrogen hormones, he says, but the process isn't cheap or energy efficient.

For now, "we still don't have an ideal way of dealing with estrogen pollution in the environment," but nanoparticles could help, Wojnarowski says.

To build the estrogen-catching particles, Müller and Marcus Halik, a chemist also at Friedrich-Alexander-Universität, drew on prior experience designing iron oxide nanoparticles that can catch other kinds of pollutants like oil or herbicides (SN: 7/25/08). The tiny iron oxide cores are each about 10 nanometers in diameter. Each

core is then covered in phosphonic acid molecules, which act like sticky hairs that scoop up contaminants.

The new version of the nanoparticles specifically targets estrogen by including two types of phosphonic acid. One kind is long, repels water and attaches to the neutrally charged part of the estrogen molecule. The other is positively charged to attract parts of estrogen hormones that carry a slight negative charge.

The smart rust removed much of the estrogen from small water samples prepared in the lab, the researchers found. Their next step is to test the nanoparticles on samples from actual waterways.

And the team is investigating exactly how the molecules on the nanoparticle surfaces grab and hold on to estrogen at the atomic scale. With this information, Halik says, they can improve the estrogen binding even more.

Skyler Ware is the 2023 AAAS Mass Media Fellow with Science News. She is a fifth-year Ph.D. student at Caltech, where she studies chemical reactions that use or create electricity.

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Life Expectancy of Pets

When getting a pet, you probably don't want to accidentally sign up for a twenty-year commitment with an impulse adoption. That's a bad deal for you and the animal. Consider how long potential companions will be around.

https://flowingdata.com/2023/09/19/life-expectancy-of-pets/?utm_source=join1440&utm_medium=email&utm_placement=newsletter

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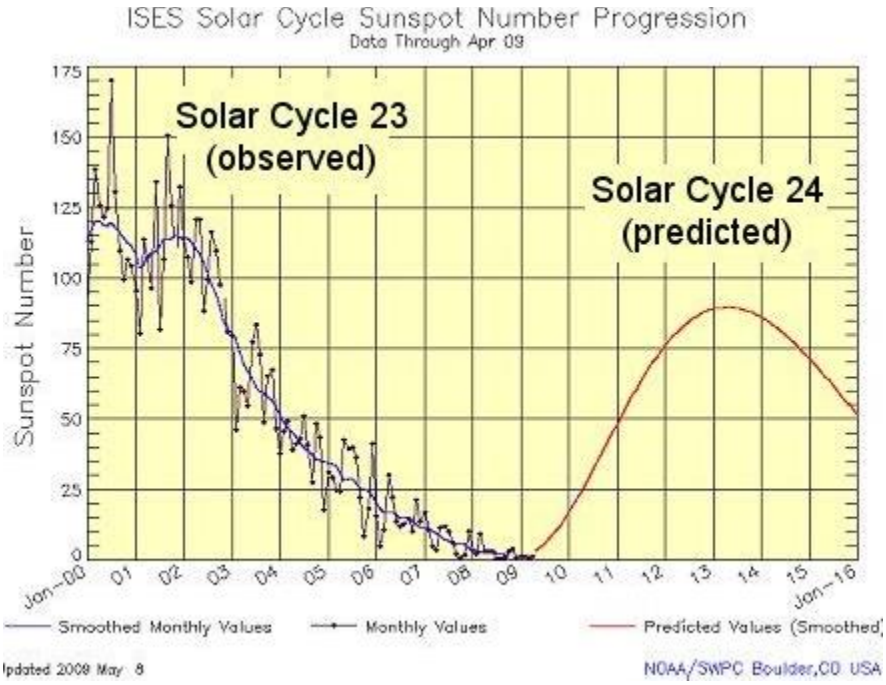
How Scientists Are Tackling Solar Cycle Prediction



Scientists have struggled to accurately forecast the strength of the sun's 11-year cycle — even after centuries of solar observations.

https://bit.ly/3Rl6yuv

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How Do Diamonds Get Their Colors?

And what's so special about the pink ones?

Diamonds are made up of carbon atoms arranged in rigid tetrahedrons (triangular pyramids). Pure diamonds are transparent and colourless. They are very rare and therefore very valuable.

While blue, green, and yellow diamonds derive their color from the presence of elements like boron, pink and brown diamonds achieve their hue when their crystalline structure is bent through intense pressure

https://bit.ly/45XwJvJ

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Watching Girls Die Online

Female starvation as spectacle has a very long history. But now 'thinfluencers' have millions of followers.

The rate of mortality in this depressing segment of the influencer business is shocking, but inevitable. Anorexia—an illness that disproportionately affects girls and women—is often dismissed as a silly problem silly girls get from looking at too many photos of fashion models, but in fact it has the highest rate of mortality of any mental illness.

https://bit.ly/3rrz0A8

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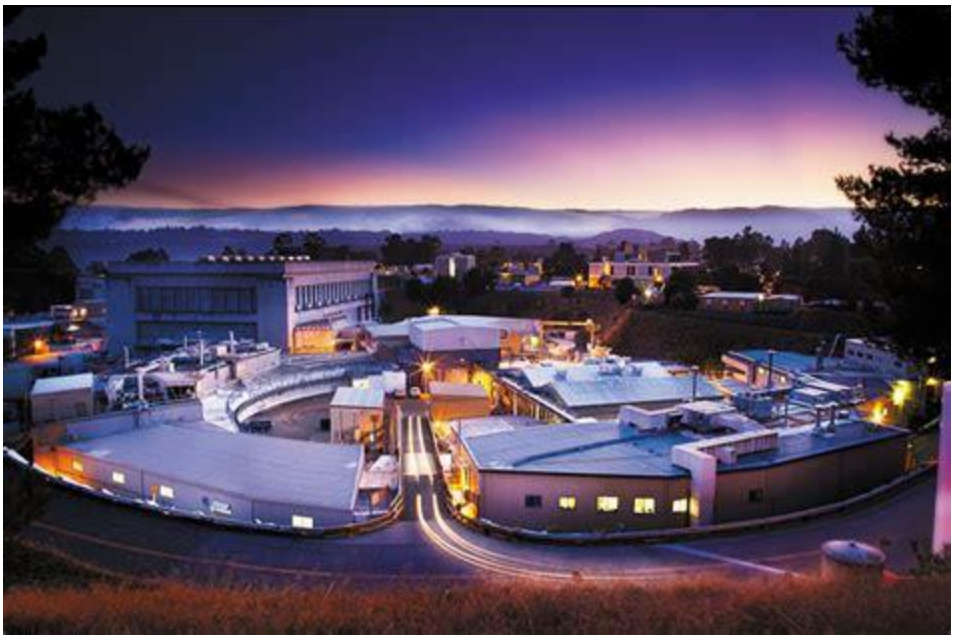
SLAC's X-Ray Laser Will 'Film' Chemical Reactions in Unprecedented Detail



Upgraded laser in California will produce one million X-ray pulses per second to study ultrafast processes at the atomic level.

The US$1.1-billion upgrade to the Linac Coherent Light Source (LCLS), housed at the SLAC National Accelerator Laboratory, has been in the works for more than a decade.

https://bit.ly/3EL0u75

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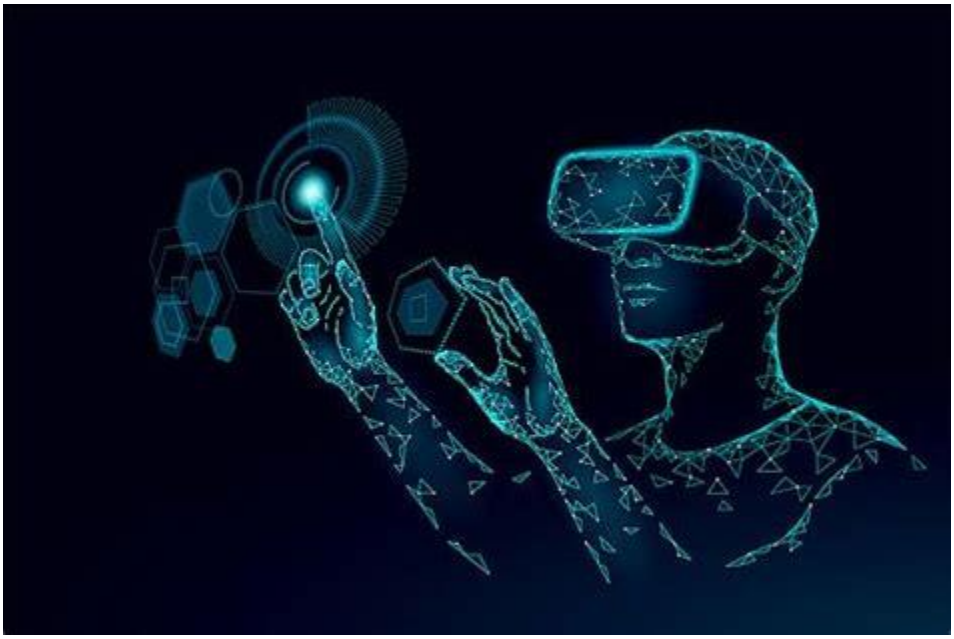
VR Engineer Explains One Concept in 5 Levels of Difficulty



The technology behind modern virtual reality is rapidly evolving, but what exactly helps create a better sense of realism and immersion? WIRED has challenged Oculus CTO John Carmack to explain the concept of realism in virtual reality to 5 different people; a child, a pre-teen, a college student, a grad student and a VR expert. John goes over what makes his company's product, the Oculus Rift, so successful at creating convincing VR, as well as the initial hesitance to introduce the lower-powered Gear VR into the market.

https://youtu.be/akveRNY6Ulw

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Cockatoo Breaks Speed Record on Tiny Scooter

A 7-year-old cockatoo has claim to the title of fastest parrot on wheels after breaking the Guinness World Record for riding a pint-sized scooter.

https://bit.ly/3PoiQQ0

I hope Chico learns to obey stop signs…a concept beyond human comprehension.

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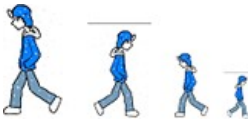
My Walking Thoughts



For Sunday September 24 2023

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Mediocrity and How I Achieved It—a Memoir

Chapter 1

It wasn't until I was four that I made it into mediocritude, not that I had to do anything to get there. Prior to that, my station in life was ordained by the existence of my brother, Lamar, four years older and not shy about sharing the import of this on a very regular and painful basis. Anyone with an older brother will understand this situation precisely. My graduation from the lower third of personhood was brought about by the birth of my sister, Louise, the event adding a new stake in the familial garden with me right there in the middle.

Now undoubtedly, you've heard woeful tales of what a curse it is to be a 'middle child,' but take no notice, just assume this to be the bleating of malcontents looking for a little sympathy. Louise—Weezie as she came to be known—might have been a pain in the tail if I'd had time to concern myself with such nonsense. Sure, she yowled like a kitten, smelled of baby powder and recycled pablum, but those were problems for people who had to put up with her. Not only had I moved up to the solidest place in the family food chain, but without any effort on my part become…well…almost invisible.

Nobody cared whether I took a nap or washed behind my ears, those were things for the scion and the princess, and the truth of the matter is that I slid effortlessly into this new slot without a thought. So few were my trials and tribulations of during this period that I can count on the thumb of my left hand the only event that left a ripple in the stream in which I floated…embarrassment I felt on the day mom drove me to the first day of kindergarten. Luckily, she hadn't been too hot to continue the chauffer task either so thereafter I was left to walk a block to Beverly Glen Boulevard, then down a vacant lot to school.

There were a bunch of vacant lots around in those days, offering trees to climb and dirt to scrabble around in unless it rained, and then there was mud. And along with mud came worms and frogs and birds and cottontails and lizards and all those creepy-crawlies that young folks love. My only duties were to be home by the time the streetlights came on, and to wash my hands before dinner.

Then came December, 7 1941, and things became even better for a five-year old, mediocre, all but invisible boy.

Continued next week.

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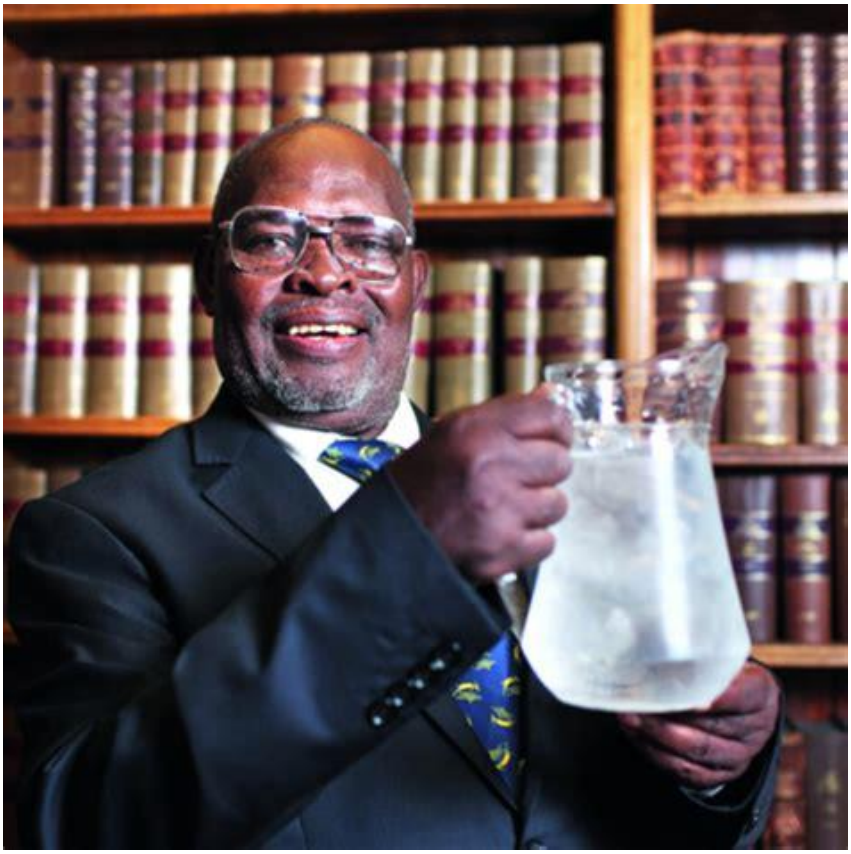
Side thought.

The memory of being driven to kindergarten by my mother for some strange and totally unconnected reason led me to think of Erasto Mpemba and his discovery.



Erasto Mpemba

The idea that hot water can freeze faster than cold water is known as the Mpemba effect, named after Erasto Mpemba, a Tanzanian schoolboy who first observed it in the 1960s. This phenomenon has been the subject of scientific investigation and debate for many years, and as you might imagine, the answer to whether hot water freezes faster than cold water is not straightforward.

The Mpemba effect is not always observed, and when it does occur, the conditions under which it occurs are specific…things like initial temperature, evaporation, convection, dissolved gases, and container and surface effects, all of which can influence the outcome.

So what?

The *what* is my shame in the amount of grief I heaped upon my poor mother and her friends to when they made such unassailable pronouncements as that hot water froze faster than cold water or that you had to wait five minutes before you removed a failed light bulb in order to let the electricity to drain out. As a five-year-old I knew these were hogwash, but now in my dotage I'm not so certain.

While scientists have yet to fully explain all the mechanisms behind the Mpemba effect, it remains an area of ongoing research and debate in the scientific community. In the

meantime, I have decided to wait five minutes before changing a light bulb just in case my mother and her friends were correct, and that electricity has its own yet-to-be-confirmed Mpemba-like effect.