

Ode to E Pluribus Unum for Sunday March 10 2024

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A Phoenix Aurora over Iceland



Image Credit & Copyright: Hallgrimur P. Helgason; Rollover Annotation: Judy Schmidt

All of the other aurora watchers had gone home. By 3:30 am in Iceland, on a quiet September night, much of that night's auroras had died down. Suddenly, unexpectedly, a new burst of particles streamed down from space, lighting up the Earth's atmosphere once again. This time, surprisingly, pareidoliacally, the night lit up with an amazing shape reminiscent of a giant phoenix.

With camera equipment at the ready, two quick sky images were taken, followed immediately by a third of the land. The mountain in the background is Helgafell, while

the small foreground river is called Kaldá, both located about 30 kilometers north of Iceland's capital Reykjavík.

Seasoned skywatchers will note that just above the mountain, toward the left, is the constellation of Orion, while the Pleiades star cluster is also visible just above the frame center. The 2016 aurora, which lasted only a minute and was soon gone forever -- would possibly be dismissed as a fanciful fable -- were it not captured in the featured, digitally-composed, image mosaic.

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Temporary Lake Forms in Death Valley National Park



David Swanson Getty Images

Heavy rains led to a temporary lake forming in the normally bone-dry park in California. Nature lovers have been taking advantage of the rare event.

A temporary lake in Badwater Basin was replenished as California was hit again by an atmospheric river storm over the weekend. The lake was first formed in the wake of Hurricane Hillary in August.

<https://bit.ly/49sl3mh>

If you've never visited Death Valley, please make plans to do so. It's otherworldly.

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NASA Spacecraft Gets Extremely Close to Io's Volcanic World

Jupiter's moon is a tortured land teeming with lava.



mashable

<https://bit.ly/3NcnNLq>

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NASA is Seeking the Next Class of Astronauts



NASA

Applications to [#BeAnAstronaut](#) are open through April 2, 2024. Start yours at go.nasa.gov/astro2024.

Better hurry. I've already risen to the challenge.

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Before They Are Gone: These Indigenous Portraits are Stunning



Masked Dancers, Paro, Bhutan, 2016
Jimmy Nelson

There’s no doubt that Jimmy Nelson’s portraits of indigenous peoples from around the world are beautiful. They’re exceptionally composed, and the diversity of faces, setting, and dress are stunning.

Photographed over several years, the series includes some of the smallest and most remote indigenous groups on the planet, captured in their most ceremonial and impressive of dress.

<https://bit.ly/49Vp6re>

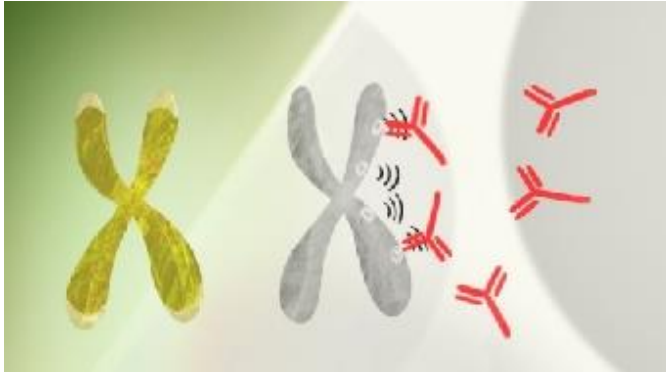
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Why Women Are at Greater Risk of Autoimmune Disease

Research throws light on the mystery of why women are much more prone to autoimmune disorders: A molecule made by one X chromosome in every female cell can generate antibodies to a woman's own tissues.



In every cell in a woman's body, one X chromosome is disabled to ensure that the right levels of proteins are produced from that chromosome pair. But the way the second chromosome is shut down generates unfamiliar molecular structures that can trigger antibodies (shown in red) targeting those structures.

Emily Moskal

Somewhere between 24 and 50 million Americans have an autoimmune disease, a condition in which the immune system attacks our own tissues. As many as 4 out of 5 of those people are women.

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Dream Chaser Spaceplane Prepares for First Trip To ISS

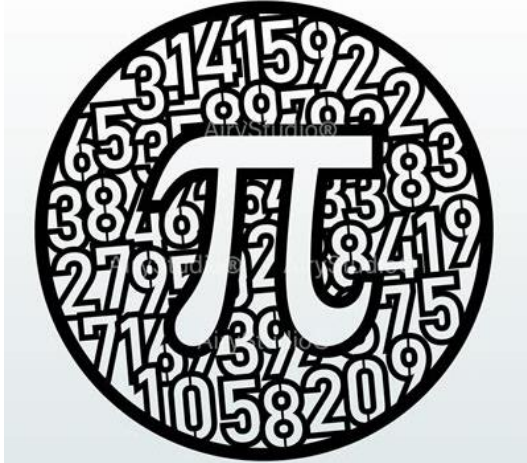


traveltomorrow.com

<https://bit.ly/4a1idVt>

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Tired of Not Being Able to Reel Off the First 100 Digits of Pi?



etsy.com

Suffer no more. Just raise the ante to 200

https://youtu.be/d0lXrqjM_m8

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Wayne Marshall Takes on the Cavaille Coll Organ



youtube.com

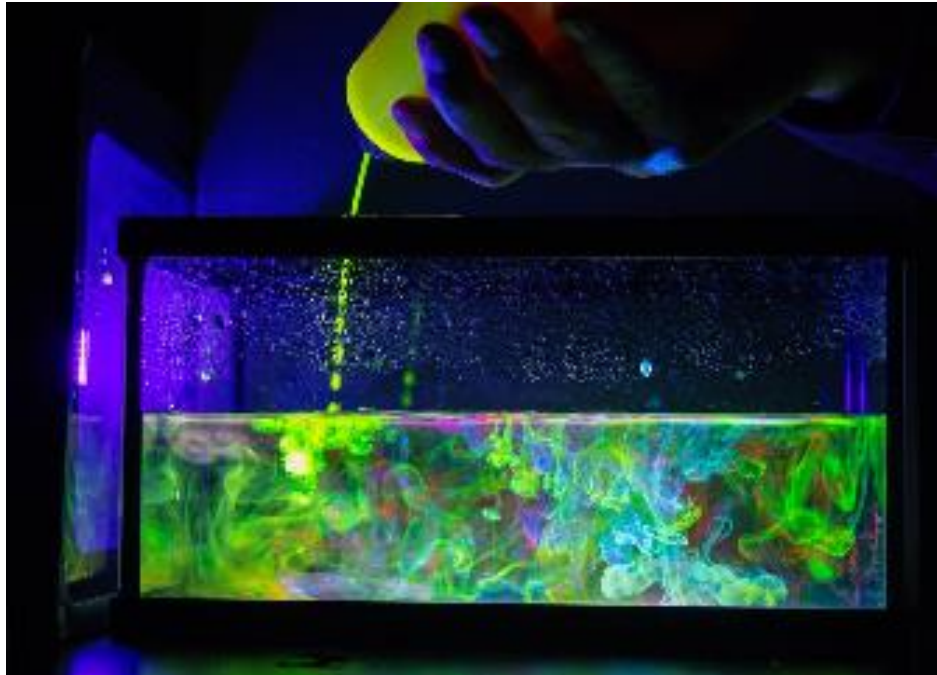
Here is the first part of my visit to play the great Cavaille Coll organ in Saint Sulpice. I had set up my video and audio recording equipment and then Maestro Roth asked me, "What would you like to play?" I told him that I would like to *Improvise!!* Here is my Tour d'Orgue!

Improvisation <https://www.youtube.com/watch?v=RqGjDWinYp4>

Prelude & Fugue In D (Halleluya) By Franz Schmidt https://youtu.be/2B8_Vcv9uEs

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Beauty in Chaos: The Unpredictable Science of Turbulence



By Omar Shamout for Caltech Magazine

Aeronautics graduate student Tanner Harms studies turbulence. While many people might associate the word with a bumpy airplane ride, Harms says that is not exactly right. "That's the effects of turbulence more than turbulence itself," he explains. "Turbulence is actually the chaotic and unpredictable movement of fluids."

Harms demonstrated this phenomenon in his lab with some water and dye. "Every time I put a drop of dye in the water, it's not going to be the same. I do the best I can to replicate each drop, but no matter what I do, it's going to look different—like a snowflake."

Among many other real-world applications, studying turbulence can help researchers figure out the best way to contain oil in the ocean following a spill and to better understand how garbage accumulates in the Great Pacific Garbage Patch, a floating pile of plastic that is twice the size of Texas.

And without turbulence, Harms adds, there would be no life on Earth. Something to think about the next time you hear the familiar "ding" on an airplane warning you to buckle up. "Because mixing is largely driven by turbulence, a world with no turbulence might have pockets of dense oxygen and dense nitrogen, but they wouldn't mix

together,” he says. “It would be very difficult for there to be anything that could sustain life as we know it.”

One of the things Harms says he loves most about his work is its inherent beauty, and he learned to appreciate the aesthetic qualities of science from his mother.

“My mom was an art teacher and a graphic designer,” he says. “Growing up, I really developed an appreciation for the artistic and creative side of science. Understanding the world—there’s something beautiful in that. I mean, who would think turbulence is beautiful? But then you look at something like the surface of Jupiter, and it’s just stunning. You see the swirling and the Great Red Spot, and it evokes a sense of awe.”

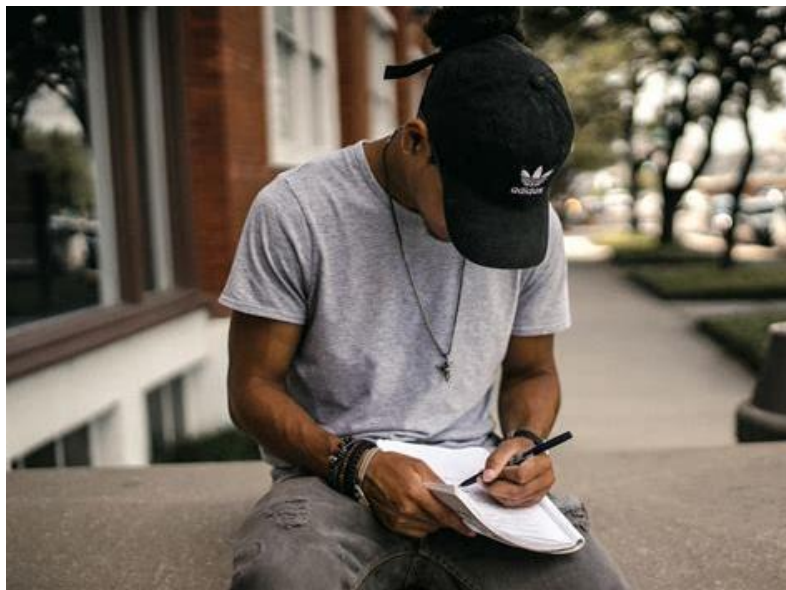
By Omar Shamout for Caltech Magazine

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Men don't have babies because God saw the way they handle a cold and knew the species would never survive.

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Does Writing by Hand Lead to Better Brain Connectivity?



(Image credit: Unsplash)

Write this down: Writing by hand may be more beneficial to brain development and learning than typing.

This is according to a [new study](#) that builds on past research suggesting a greater cognitive benefit for handwriting vs. typing, and provides more evidence to support a growing movement to require the teaching of handwriting in many states. For the study, EEG data for 36 university students was recorded as they were asked to write down words they were shown on a laptop.

<https://bit.ly/3P5Fttf>

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Gettin' There: Notre Dame's New Spire Revealed

A milestone in cathedral's reconstruction after fire



Reconstruction work continues at Notre Dame in central Paris. The cathedral is scheduled to reopen on Dec. 8.

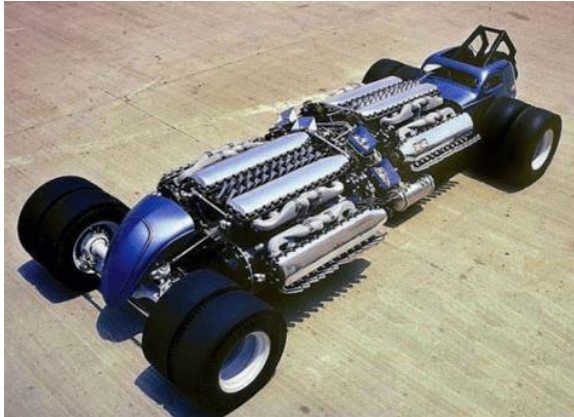
Nathan Laine/Bloomberg Via Getty Images

Anticipation has been building among Paris residents ahead of the cathedral's reopening, announced for Dec. 8. After the fire, French President Emmanuel Macron vowed to rebuild Notre Dame within five years. An army of carpenters, stone masons, iron workers and artisans from about 20 other different specialties have been working on restoring the medieval structure.

<https://bit.ly/3UID4bI>

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The Insane Story of Quad AI



pinterest.com

If there is one drag racing machine from the sport's history that millions of people have seen on the internet, but few have any real story on, it is this one. Known as Quad AI and built by a brilliant hot rodder named Jim Lytle, it is one of the most powerful machines ever set on four wheels. Now, how did it come to exist? What happened to it? What else did Lytle build?

All of that is explained in this detailed look back at one of the most visually arresting automobiles ever crafted by human hands. Lytle was a craftsman, a mad scientist, and a genius who revolutionized drag racing, almost unintentionally. This is his story and the story of Quad AI.

https://youtu.be/jaY2_FwfrEE

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Are Driverless Dreams Going Up in Flames?



*Waymo robotaxi on fire
San Francisco Fire Department via X*

In the 19th century, Luddites smashed up automatic looms to protest the new technology. Last weekend, people at a San Francisco Lunar New Year celebration seemed to have the same idea—but with more firepower. A mob incinerated an autonomous vehicle (AV) operated by Alphabet subsidiary Waymo after it rolled into a crowded intersection.

After one person jumped on the hood and smashed the windshield of the driverless—and passengerless—Jaguar I-PACE crossover, others began breaking windows and spray-painting the body. The car was eventually set ablaze with fireworks.

Though the mob's motivation is unknown, the attack felt like a comeuppance: Over the past few years, SF has been a major testing hub for AVs, along with Phoenix and Austin. The hundreds of driverless taxis zipping around the city's hills annoy residents almost as much as out-of-towners who call it San Fran. AVs have been filmed causing traffic jams and blocking emergency vehicles on numerous occasions. One has even been at the center of a very serious accident.

The roadblocks have cast doubt on the near-term prospect of a future where getting chauffeured around by AI is mainstream. So, buckle in while we explore the state of the AV industry and what it might take to stop it from inspiring rage.

Industry stuck in a rut

One major setback for a driverless future came in October, when a Cruise AV, operated by GM, struck a woman who was thrown into its path after getting hit by a human driver in San Francisco. Instead of stopping immediately, the Cruise AV dragged the pedestrian 20 feet as it tried to pull over to the side of the road. The woman sustained serious injuries.

California and federal officials are investigating the company, which has been in crisis ever since an investigation by an outside law firm that Cruise hired found that the incident was the result of multiple technical failures. Cruise admitted that it improperly failed to disclose all the details to regulators. The company recalled its entire fleet of 950 AVs, paused all testing countrywide, and sacked top executives. California's DMV has suspended Cruise's permit to test AVs on public roads.

But it's not just about Cruise:

Waymo recalled 444 self-driving cars this week after two of its AVs in Arizona bumped the same towed vehicle minutes apart.

A handful of Chinese companies, including Didi, have recently stopped testing their AVs in California. While friction between the US and China could be to blame, George Washington University Engineering professor John Helveston told Business Insider that

Didi's exit might have to do with the harsher regulatory environment following the Cruise accident.

Experts say that the biggest issues with current AVs occur when they run into unusual situations that might be a no-brainer for a person. It's likely a human driver would've stopped the car to check on a pedestrian they just hit before trying to pull over, while many SF Uber drivers would've probably used common sense and avoided the chaos of the Lunar New Year festivities.

Is it just an image problem?

The industry's problems are its own doing, according to the Verge's transportation editor, Andrew J. Hawkins. He blames the current loss of public trust on years of overpromising by some industry executives (ahem, Elon) that we'll all be cruising around in the backseat while our cars drive themselves in the near future. Hawkins believes a lack of regulation allowed some companies to rush into testing AVs, which ultimately undermined the public's confidence in the tech.

Meanwhile, some say we should remember that while the spate of high-profile AV fails is disconcerting, humans behind the wheel can spell even more trouble—especially since they're not always attentive or sober. Ars Technica reporter Timothy B. Lee, who analyzed Cruise and Waymo crash reports, claims that Waymo AVs already appear safer than human drivers, though he says more research is needed.

While Lee notes that both companies' driverless cars sometimes struggle to avoid hitting inanimate objects and Cruise's AVs need to be better at navigating intersections, they've mostly been involved in minor accidents. He argues that given AVs' potential to become "much safer" than human drivers, ending testing on city streets "could easily cost more lives than it saves."

But the public's perception of AVs doesn't always match the cars' safety record: A study published in Transportation Research in 2021 found that autonomous vehicles will have to be much less likely, "potentially unrealistically," to crash than human drivers for passengers to trust them.

Most people probably have time to get used to the idea...a recent report by S&P Global Mobility predicts that a car "that can go anywhere and do everything a human driver can" will not arrive before at least 2035, while in the meantime, AVs will only be operated in designated areas or as an aid for human drivers.

Will there always be a San Francisco? Sometimes I wonder.

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Preserving the Ogallala's 'Fossil' Water Reserves



*Water levels for Ogallala Aquifer decline considerably
newschannel10.com*

The Ogallala Aquifer in the U.S. Great Plains region provides water to some 2.3 million people and nourishes nearly a quarter of all irrigated agricultural land in the country. And it's slowly but surely going dry—in some spots more rapidly than others.

The Ogallala formed during the Miocene and Pliocene eras and during the last ice age; replenishing it once again would take 6000 years of rainfall. "On a human timeline, it is

a nonrenewable resource,” emphasized agroecologist Meagan Schipanski of Colorado State University.

She and colleagues speaking at the AAAS annual meeting described various approaches they’ve been exploring to work with local growers, policymakers and community members to slow the drain on the Ogallala. “I’ve come to see this much more as a human problem than a hydrological one,” Schipanski said. She believes strategies that target individual operators aren’t an effective use of resources. Kansas State’s Matthew Sanderson, who looks at agriculture through a sociological lens, noted that top-down directives tend to be rejected or rebuffed by farmers and policymakers. Instead, both researchers argued that the most effective strategies for heading off depletion start with bottom-up approaches that begin with tweaks to local policies.

Steven Evett, a water management researcher at the U.S. Department of Agriculture, added that shifting the region’s agriculture doesn’t have to harm local economies. In fact, some strategies may result in higher profits. For example, in areas at high risk for groundwater depletion, switching out water-hungry corn for more certain varieties of cotton could bring in 30% more revenue and reduce water use by 26%.

Those of us who worked on the USAF’s MX Basing Mode EIS will recall the concern and discussions on possible remediation efforts as part of the analysis. I seem to remember that the water level in some areas near the Texas/New Mexico boundary was forcing a return to economically chancy dry practices.

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Fly Through Tesla’s Giga Berlin Facility



cgtrader.com

<https://twitter.com/i/status/1763602599381745982>

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Macy's to Add 150 Locations to its List of Closing Stores



[Photo: Nick Sarvari/Unsplash]

After a disappointing holiday quarter, the retailer said it will double down on its luxury offerings, such as Bloomingdale's.

Iconic department-store chain Macy's today announced that it is preparing to close 150 stores after a disappointing holiday quarter that saw sales fall almost 2%. The announcement of the store closures is part of a turnaround plan that the company says is "a bold new chapter" in its history.

The decision to close 150 underperforming stores comes after Macy's already announced the closure of 5 of its stores in January. As of October 2023, Macy's had about 500 Macy's-branded stores. After these closures, there will be around 350 Macy's stores left in the United States.

Reached for comment by Fast Company, the retailer said it did not yet have a list of the locations to share. The company announced the closures would be completed sometime in 2026. It said it expects to close the first 50 locations by the end of this fiscal year. Moreover, Macy's revealed that it would prioritize investing in the remaining Macy's stores.

"Closing a store is never an easy decision," Macy's said in an emailed statement. "We are committed to supporting our impacted colleagues with opportunities wherever available across Macy's, Inc. and to communicating with transparency."

Macy's also announced that it would focus on its luxury offerings. The company operates more than 150 Bluemercury stores and upwards of 50 Bloomingdale's stores. Macy's said it anticipates that "15 Bloomingdale's nameplate stores and at least 30 new Bluemercury stores, along with roughly 30 Bluemercury remodels," will be opened in new and existing markets between now and 2027.

By Michael Grothaus for FastCompany



America's Newest National Park

Amache is now officially part of the National Park system.



The mess halls at Amache caused a breakdown of the traditional Japanese family structure.

Instead of an intimate family meal, everyone at the camp was crammed together in one room to eat together.

Gary Ono

At its peak, Amache — also known as the Granada Relocation Center — housed more than 7,000 Japanese-Americans during the 1940s. They were forced to live behind barbed wire in poorly-insulated rooms. This was one of ten other Japanese internment camps that existed during World War II, with some being located in the Mountain West.

<https://bit.ly/49QJoIJ>

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MLB Players Miffed at Sport's New See-Through Pants



Ohtani San; Who better to demo the new uniform.

AP photo Ashley Landis

PEORIA, Ariz. (AP) — MLB's new uniform reveal hasn't gone very well. Now some of the rampant criticism has moved below the belt.

Major League Baseball Players Association deputy executive director Bruce Meyer confirmed on Thursday that the organization is relaying concerns from players to MLB about the new pants, which are somewhat see-through. The complaints — first reported by ESPN — are part of broader scorn for the new uniforms, which are designed by Nike and manufactured by Fanatics.

"I know everyone hates them," Phillies shortstop Trea Turner said last week. "We all liked what we had. We understand business, but I think everyone wanted to keep it the same way, for the most part, with some tweaks here or there."

MLB officials say the new uniforms improve mobility by providing 25% more stretch and also will dry 28% faster. The lettering, sleeve emblems and numbering are less bulky in an attempt to make uniforms more breathable and comfortable.

Commissioner Rob Manfred previously said he expects criticism to fade, but that was before the below-the-belt complaints.

Some MLB players don't know if they like the new pants — because they don't have them yet. The San Diego Padres played their first spring training game against the Los Angeles Dodgers on Thursday in last year's pants.

Veteran pitcher Joe Musgrove wasn't sure when the Padres were supposed to get their new pants.

"Hopefully by Opening Day," Musgrove said. "We tried stuff on last year, we tried stuff on again in spring, but the samples they gave us, they didn't have the proper length for anybody, so it's hard to gauge if they fit right or not."

Musgrove shrugged off the controversy, saying that it was far from the most important thing he's worried about this spring, even if it's a little annoying.

"Pants are pants — we're going to wear them," he said. "If they don't fit right, you'll deal with it."

Heaven forbid players be allowed to stand in the way of fashion.

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Jet Suit Race Series Launched!



youtube.com

https://youtu.be/QiQ_LZtwpFk?t=1

Even better than Roller Derby, I betcha.

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K-12 Education Spending Spotlight



Manhattan Institute

Public education is at a crossroads: Here’s a comprehensive look at K-12 resources and outcomes examining key education spending, enrollment, staffing, and student performance data over the past two decades in all 50 states.

Putting it all together—enrollment declines, learning loss, unsustainable budgets, union activism, curricular battles, and the rise of school choice—public education is clearly at a crossroads, and the decisions made today will shape generations to come. To be sure, much has changed since 2020 when the COVID-19 pandemic swept the nation, but pre-pandemic education trends provide policymakers with a critical anchor for navigating post-pandemic decisions.

<https://reason.org/k12-ed-spending/crossroads-report/>

Even if you’ve got no dog in the K-12 education fight, you need to read this comprehensive look at the issues developed by the Hoover Institute.

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How IMAX Film Cameras and Digital Projectors Work



IMAX talks the future of cinema.

pinterest

From innovative projectors to custom processing tools — and soon, a new film camera, WSJ explores the tech that goes into creating IMAX's immersive movie experience.

<https://youtu.be/6DAFkaGUt4>

Wonder what makes IMAX IMAX? Wonder no more. It's fascinating.

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Toward Truly Compostable Plastic



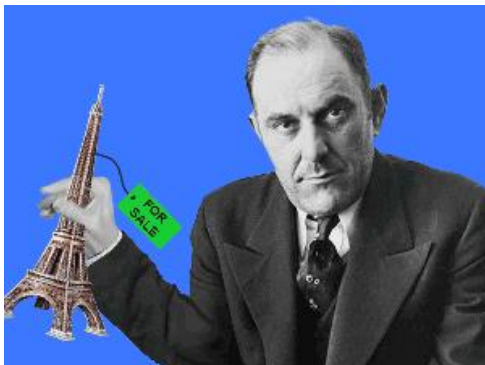
research.qut.edu.au

Materials scientists are cooking up environmentally friendly polymers from natural sources like silk, plant fibers and whole algae. Economics and acceptance remain hurdles.

<https://bit.ly/3TnqKvh>

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The Con Man Who Sold the Eiffel Tower — Twice



Victor Lustig scaled up until he reached the height of his "profession," selling a historic monument he didn't own.

Lustig was short and slight, with ears that protruded with determination from his head. With him was his new friend, businessman André Poisson.

The pair were in the final stages of making a deal for the Eiffel Tower. For millions of gold francs, Poisson would buy it from the government and disassemble it for scrap. As they walked in the tower's shadow, Lustig promised Poisson that with just a bit of paperwork, the iconic monument would be his.

<https://bit.ly/3v09SIZ>

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The Wild Flower Hotline is Returning ...

but will 2024 give us a superbloom?



uk.news.yahoo.com

<https://www.yahoo.com/lifestyle/wild-flower-hotline-returning-2024-110024021.html>

Time will tell.

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A Quantity of Quantum Stuff

Michio Kaku: Quantum Computing Is the Next Revolution

"We're now in the initial stages of the next revolution."



thespectator.com

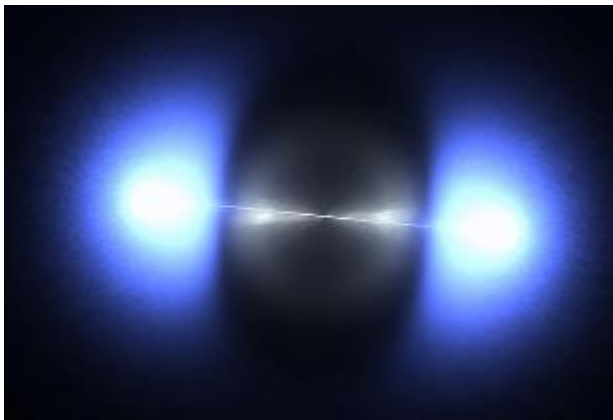
https://youtu.be/qQviI1d_hFA

I'm not sure how much I learned from this, rather how much there is for me to learn

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Quantum-Computing Approach Uses Single Molecules as Qubits

Platforms based on molecules manipulated using 'optical tweezers' might be able to perform complex physics calculations.



Quantum entanglement (illustration) is one of the effects that underpins quantum-computing technology.

Credit: Peter Jurik/Alamy

Physicists have taken the first step towards building quantum computers out of individual molecules trapped with laser devices called optical tweezers. Two teams report their results in *Science* on 7 December^{1,2}, in both cases making pairs of calcium

monofluoride molecules interact so that they became entangled — a crucial effect for quantum computing.

<https://bit.ly/48eZXYh>

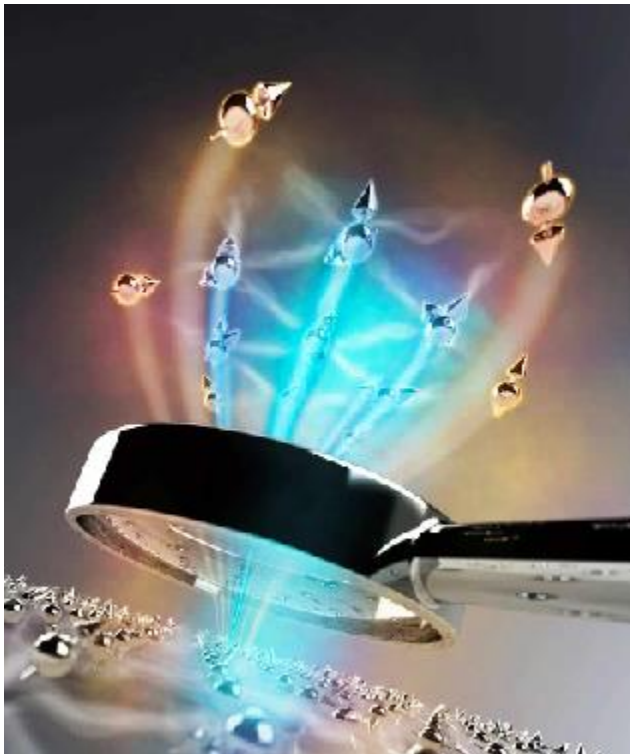
References:

<https://doi.org/10.1126/science.adf8999>

<https://doi.org/10.1126/science.adf4272>

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Quantum Simulation of Large-Scale Materials Entanglement



How entangled is it? The researchers obtained temperature profiles of their system showing that particles that interact strongly are "hot" (red) and those that interact little are "cold" (blue). Entanglement is greatest when interactions are strong.

(Courtesy: Helene Hainzer)

Physicists in Austria have found a quick and efficient way of extracting information on a quantum material's large-scale entanglement structure thanks to a 50-year-old theorem from quantum field theory. The new method could open doors in fields such as quantum information, quantum chemistry or even high-energy physics.

Quantum entanglement is a phenomenon whereby the information contained in an ensemble of particles is encoded in correlations among them. This information cannot be accessed by probing the particles individually, and it is an essential feature of quantum mechanics, one that clearly distinguishes the quantum from the classical

world. As well as being pivotal for quantum computing and quantum communication, entanglement heavily influences the properties of an emerging class of exotic materials. A deeper understanding of it could therefore help scientists understand and solve problems in materials science, condensed-matter physics and beyond.

The problem is that learning about the internal entanglement of a large number of entangled particles is notoriously hard, since the complexity of the correlations increases exponentially with the number of particles. This complexity makes it impossible for a classical computer to simulate materials made from such particles. Quantum simulators are better equipped for this task, as they can represent the same exponential complexity as the target material they are simulating. However, extracting the entanglement properties of a material with standard techniques still requires an intractably large number of measurements.

Quantum simulator

In their new, more efficient method for evaluating the strength of a system's entanglement, researchers from the University of Innsbruck and the nearby Institute of Quantum Optics and Quantum Information (IQOQI) interpreted entanglement strength in terms of a local temperature. While highly entangled regions of the quantum material appear "hot" in this method, weakly entangled regions appear "cold". Crucially, the exact form of this locally varying temperature field is predicted by quantum field theory, enabling the team to measure temperature profiles more efficiently than was possible with previous methods.

To simulate an entangled quantum material, the Innsbruck-IQOQI team used a system of 51 $^{40}\text{Ca}^+$ ions held in place inside a vacuum chamber by the oscillating electric field of a device called linear Paul trap. This setup allows each ion to be individually controlled and its quantum state read out with high accuracy. The researchers could quickly determine the right temperature profiles by placing a feedback loop between the system and a (classical) computer that is constantly generating new profiles and is comparing them with the actual measurements in the experiment. They then made measurements to extract properties such as the system's energy. Finally, they investigated the internal structure of the system's states by studying the "temperature" profiles, which enabled them to determine the entanglement.

Hot and cold regions

The temperature profiles the team obtained show that regions that are strongly correlated with surrounding particles can be considered "hot" (that is, highly entangled) and those that interact very little can be considered "cold" (weakly entangled). The researchers also confirmed, for the first time, predictions of quantum field theory as adapted to ground states (or low temperature states) of materials via the Bisognano-Wichmann theorem, which was first put forward in 1975 as a way of relating certain

Lorentz transformations in spacetime to transformations in charge, parity and time. In addition, the method enabled them to visualize the crossover from weakly entangled ground states to strongly entangled excited states of the quantum material.

Team leader Peter Zoller, who holds positions at both Innsbruck and the IQOQI, says that the results and the techniques – quantum protocols running on a quantum simulator – used to obtain them are generally applicable to the simulation of quantum materials. For this reason, he believes they hold broad importance for quantum information science and technology as well as quantum simulation. “For future experiments we [would] like to do this with other platforms and more complicated/interesting model systems,” he tells Physics World. “Our tools and techniques are very general.”

Entanglement gets hot and messy

Marcello Dalmonte, a physicist at the Abdus Salam International Centre for Theoretical Physics in Italy who was not involved in the research, calls the results “a true ground-breaker”. In his view, the method brings our experimentally testable understanding of entanglement to a new level by unveiling its full complexity. He also thinks the technique will improve our understanding of the relationship between entanglement and physical phenomena, and is excited by the possibility of using it to solve key questions in theoretical physics, such as reaching a better understanding of the operator entanglement structure for mixed states. Another possible area to explore might be the mutual entanglement between chunks of matter, though Dalmonte adds that this would require further improvements to the protocol, including boosting its scalability.

The research is described in [Nature](#).

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Coming to Grips with 'Quantum Gravity'



*An illustration shows a quantum experiment investigating gravity on a tiny scale.
(Image credit: University of Southampton)*

Can understanding quantum gravity help unite quantum mechanics with general relativity at last?

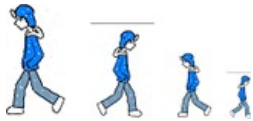
One of the reasons for this dilemma is that, while three of the universe's four fundamental forces — electromagnetism, the strong nuclear force and the weak nuclear force — have quantum descriptions, there is no quantum theory of the fourth: Gravity.

<https://www.space.com/gravity-quantum-theory-cosmic-mysteries>

Don't worry, there still will be plenty of mysteries to keep scientists busy.

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My Walking Thoughts



For Sunday March 10 2024

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Trip to Terra Incognita: Pensacola, January 1960

On to Primary Flight Training at Saufley Field

The trip from Main side NAS Pensacola to its outlying subordinate NAS Saufley Field took less than half an hour and was memorable on this journey to my second phase of flight training for the mile after mile of Live Oak, palmetto, and long leaf pine forests, broken up by squished water moccasins, billboards offering a variety of tattoos, legal services, and here and there dilapidated taverns whose appearance suggested they had been moldering there since the last ice age.

My orders were to the squadron operating the diminutive Temco TT-1 Pinto jet trainer rather than the Beechcraft T-34B piston engine teeny-weeny that accommodated the bulk of primary students. The TT-1 was a particularly desirable assignment since it virtually guaranteed progress through Basic and Advanced jet training courses and into the wonderful world of fighters.



[The Pinto was a mid-wing, tricycle landing gear trainer powered by a single Continental Motors J69 equipped with many of the same features found in operational jets, including ejection seats, liquid oxygen equipment, speed brakes, along with typical flight controls and instrument panels. Although the flight characteristics were considered good, the bird was seriously underpowered. The Air Force was smarter by equipping its T-37 TWEET primary jet trainer with two advanced versions of the J-69, allowing it to remain in service for nearly 50 years.]

The gate guard, a sailor this time, noted my uniform and directed me to the Marine hangar without bothering to look at my orders. Just as I pulled to a stop in the parking area I watched in mystification as a flightsuited herd burst onto the flightline looking to the west where a half dozen crash vehicles were heading hell-bent-for-leather toward the fence line.

Joining what was by now a milling crowd of confused onlookers I asked a flight student what was going on. He shrugged, then said, "Someone must have run off then end of the runway...I guess."

A nearby spectator offered the reasonable conjecture, "Betcha it was one of those stupid minijets."

"You mean a TT-1," I asked.

"Yeah, one of those screaming Mimi's only a nutcase would get into."

After the hubbub subsided, I found the duty officer who looked at my orders and suggested I hang around while he checked on what was going on. When eventually he returned shaking his head, I made the shrewd assumption things were not going as I had expected.

"No final decision but rumor has it the Pinto program's history," he explained. I was stunned.

"Go check into the BOQ and come back here after lunch." On return was told I was to rejoin my Preflight mates for training in the T-34. It was at this point the chopping sounds of helicopter blades invaded my former peace of mind.

The event that caused the excitement was a Pinto that lost its engine just as the pilot raised the nose for takeoff. With too little runway left, the bird sped across the overrun raising a cloud of dust before plunging through the perimeter fence and into a bog where it came to a steaming rest. Unhurt but breathing hard, the student and instructor deplaned and were sitting on the bank when the rescue vehicles arrived.

Two weeks later word came down that the TT-1 program was finished.

Next week we meet the Beechcraft T-34B Mentor.