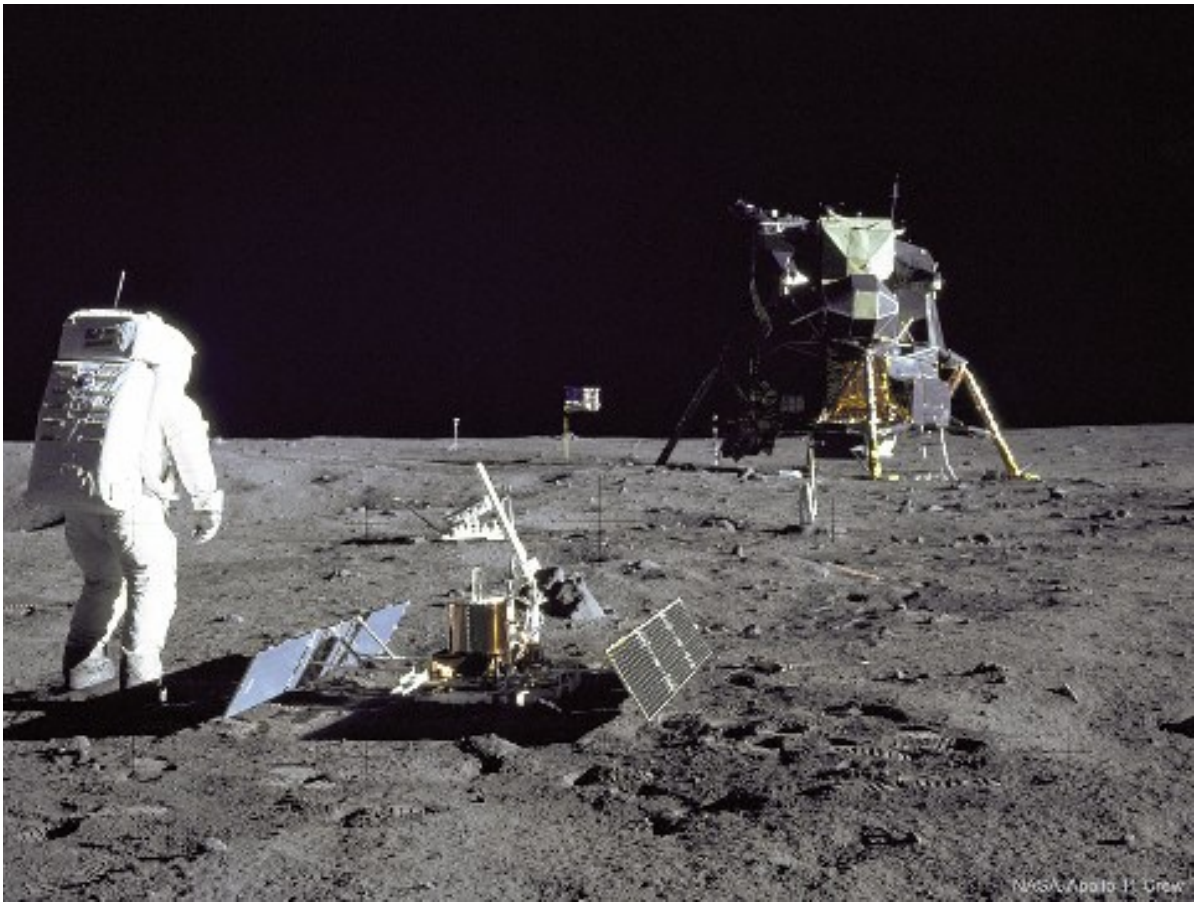
Ode to E Pluribus Unum for Sunday April 27 2025

Moonquakes Surprisingly Common



Why are there so many moonquakes? Analyses of seismometers left on the moon during the Apollo moon landings reveal a surprising number of moonquakes occurring within 100 kilometers of the surface. In fact, 62 moonquakes were detected in data recorded between 1972 and 1977.

Many of these moonquakes are not only strong enough to move furniture in a lunar apartment, but the stiff rock of the moon continues to vibrate for many minutes, significantly longer than the softer rock earthquakes on Earth.

The cause of the moonquakes remains unknown, but a leading hypothesis include tidal gravity from -- and relative heating by -- our Earth. Regardless of the source, future moon dwellings need to be built to withstand the frequent shakings.

Pictured here, Apollo 11 astronaut Buzz Aldrin stands beside a recently deployed lunar seismometer, looking back toward the lunar landing module.

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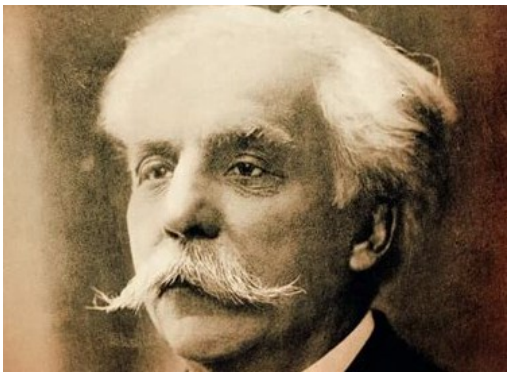
Chords & Riffs

Gabriel Faure (1845-1924)



interlude.hk

Fauré's musical abilities became apparent at an early age. When the Swiss composer and teacher Louis Niedermeyer heard the boy, he immediately accepted him as a pupil. Fauré studied piano with Camille Saint-Saëns, who introduced him to the music of Franz Liszt and Richard Wagner. While still a student, Fauré published his first composition, a work for piano, Trois romances sans paroles (1863).

He wrote more than 100 songs, including "Après un rêve" (c. 1865) and "Les Roses d'Ispahan" (1884), and song cycles that included La Bonne Chanson (1891–92) and L'Horizon chimérique (1922). He enriched the literature of the piano with a number of highly original and exquisitely wrought works, of which his 13 nocturnes, 13 barcaroles, and 5 impromptus are perhaps the most representative and best known.

Fauré's Ballade for piano and orchestra (1881; originally arranged for solo piano, 1877–79), two sonatas for violin and piano, and Berceuse for violin and piano (1880) are among other popular works. Élégie for cello and piano (1880; arranged for orchestra, 1896), and two sonatas for cello and piano, as well as chamber pieces, are frequently performed and recorded.

One of the most striking features of his style was his fondness for daring harmonic progressions and sudden modulations, invariably carried out with supreme elegance and a deceptive air of simplicity. His quiet and unspectacular revolution prepared the way for more sensational innovations by the modern French school.

Among his students were Maurice Ravel, Georges Enesco, and Nadia Boulanger.

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Pavane, Op. 50 - Paintings By "Claude Monet https://youtu.be/mpgyTl8yqbw

Apres un Reve, Cello and Piano https://youtu.be/XTOkWD6xvTI

Cantique de Jean Racine https://youtu.be/NzUMfVpugq4

Sicilienne https://youtu.be/Hsg55q2F9MU

"Requiem" |, https://youtu.be/flboe048gn4

Unusually gentle for a requiem mass, the work is often reminiscent of the composer's best-known work, the restful and graceful Pavane of 1887. Fauré himself described his Requiem as "a lullaby of death," in part inspired by the death of his parents in the 1880s.

My friend at MCAS Cherry Point, David Bennett, proposed (and then brought to fruition) a performance of the Requiem, making use of an odd assemblage of rank amateur Marines accompanied by some very talented East Carolina College coeds. I sang in the midst of the First Bass section, not because my voice was any good , but because I could read music.

Dave made up for the male side of the choir with his truly gifted voice.

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FLASHMOB CENTRAL

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Evenord-Bank Flashmob Nürnberg

pinterest

https://youtu.be/a23945btJYw

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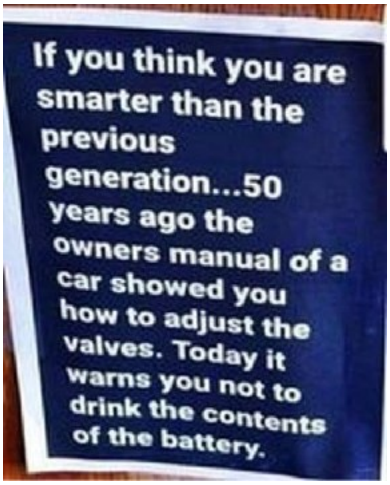

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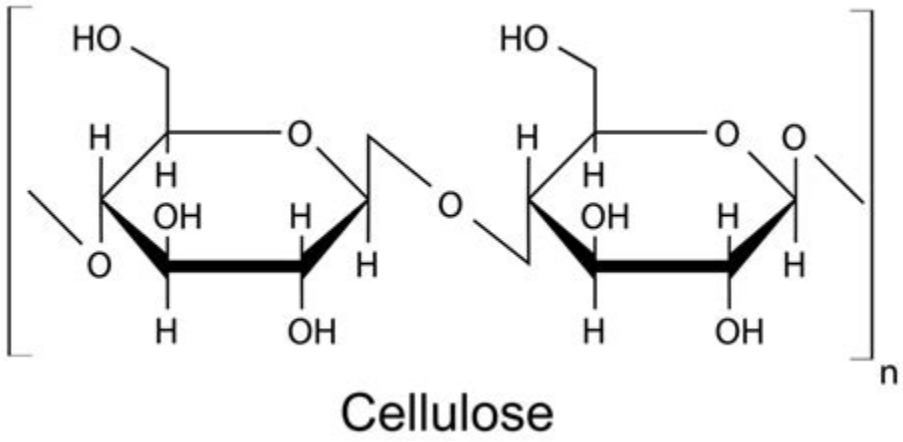
Plants May Have Been Key to Sustainable Plastics All Along



home.org

Single-use plastics were a game changer for many industries. But like other plastics, they take forever to break down, and because of that, they have been wreaking environmental havoc since their invention. Now, researchers think they've found an alternative: cellulose, the key structural molecule in plants.

Cellulose is already the primary component of thin, plastic-y cellophane, but the chemicals that coagulate the molecule into sheets didn't allow for stiffer varieties. But it turns out cellulose doesn't need coagulants. If treated with a chemical called lithium bromide, it dries into a thick, hard "paperboard" that's both waterproof and fully recyclable, a new study finds. In fact, experiments demonstrated that the cellulose material disintegrates in less than a year in the depths of the ocean, where

biodegradation is relatively slow. And it can be molded into cups or straws that are much tougher than paper.

"We have now developed a regenerated cellulose material from this solvent system that is not only shapeable but also has the potential to serve as a sustainable alternative to conventional plastics," co-author Noriyuki Isobe told New Scientist. And even better, it can be sourced from current waste materials like fabric and undesirable wood, and can therefore "play a pivotal role in the sustainable circular economy of the future," the team wrote.

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FAA Quietly Adds Special Issuance Medical Expiry Dates

Some special issuances come with an end date that other medicals don't have.

AVweb file

The FAA is charged by Congress with issuing certificates to qualified persons. These certificates are federal licenses. One such license is the medical certificate, issued by the FAA's Office of Aerospace Medicine ("AAM") under 14 CFR Part 67, Medical Standards and Certification. In accordance with Section 67.3, a person who meets the medical standards in Part 67 is entitled to the applied-for medical certificate. Part 67 does not provide for an expiration date on medical certificates; instead, medical certificate validity periods are listed in Part 61, Section 61.23(d) specifically.

Sometimes, medical certificate applicants find themselves outside the "four corners" of Part 67. Such persons can still apply for (and be issued) medical certificates under the discretionary issuance Section 67.401. However, such persons are typically then subjected to an alternative set of eligibility requirements that exist only in a policy document called the Guide for Aviation Medical Examiners ("GAME"). While the GAME is

publicly available, it is directed at AAM designees, and AAM changes it regularly without advance notice to the public.

AAM has begun in the last few years to sometimes impose a "drop-dead" date in the Limitations section of some "special issuance" medical certificates. Typically this limitation takes the form "Not valid for any class after..." AAM seldom explains to the certificate holder the basis for the imposition of this limitation. Nor is there any basis in Part 67 for a date limitation on a medical certificate. (Section 67.401(d)(1) states that AAM may "Limit the duration of an Authorization." It does not provide for limiting the duration of a medical certificate).

These date limitations are a relatively new phenomenon, begun without public notice. And their use is not documented anywhere, including in the GAME, which has led to wide variability in their application. As new civilian pilots, we learn that medical certificates are issued without expiration dates. Instead, we were taught to refer to 14 CFR Section 61.23(d), a Flight Standards rule, which contains a table that sets forth medical certificate validity periods and describes the way a first class medical certificate, for example, becomes valid for second class privileges after a period of time, and then third class.

"Drop-dead" date limitations on medical certificates directly interfere with the regulatory validity periods listed at Section 61.23(d). These Section 61.23(d) regulatory validity periods are even referenced on all medical certificates: standard text included on all medical certificates states "The holder of this certificate must ... comply with validity standards specified for first-, second-, and third-class medical certificates (14CFR § 61.23)."

Indeed, the holder of such a medical certificate may wish to comply with these validity standards, as required by both the rule and the text on the medical certificate; but be prevented from doing so as a result of AAM's unexplained imposition of this undocumented and extra-regulatory limitation. By imposing these "drop-dead" date limitations, AAM is interfering with the Section 61.23(d) regulatory validity periods, which are applicable to all medical certificates.

For these reasons, I have applied for a regulatory grant of exemption that provides that medical certificates issued under it will not contain "drop-dead" date limitations but will instead comply with the uniform regulatory validity periods at Section 61.23(d).

By Eric Friedman, a former FAA headquarters-based aviation safety inspector forAVWeb

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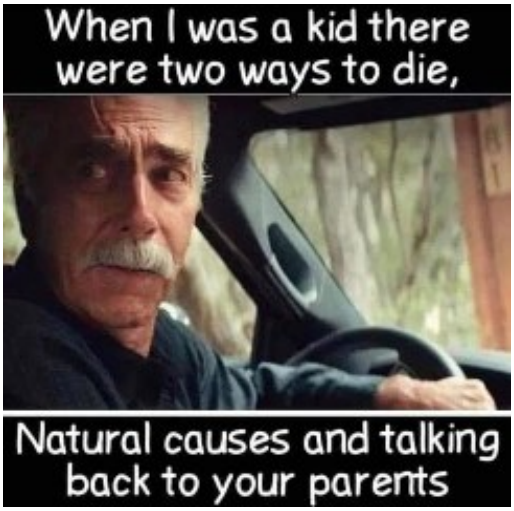

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Quantum Behavior in Brain Neurons Looks Theoretically Possible

Quantum connection Researchers have derived a Schrödinger-like equation specifically for neurons.
(Courtesy: iStock/wildpixel)

A new study probing quantum phenomena in neurons as they transmit messages in the brain could provide fresh insight into how our brains function.

In this project, described in the *Computational and Structural Biotechnology Journal*, theoretical physicist Partha Ghose from the Tagore Centre for Natural Sciences and Philosophy in India, together with theoretical neuroscientist Dimitris Pinotsis from City St George's, University of London and the MillerLab of MIT, proved that established equations describing the classical physics of brain responses are mathematically equivalent to equations describing quantum mechanics. Ghose and Pinotsis then derived a Schrödinger-like equation specifically for neurons.

Previously, "both physicists and neuroscientists have largely dismissed the relevance of standard quantum mechanics to neuronal processes, as quantum effects are thought to

disappear at the large scale of neurons," says Pinotsis. But some researchers studying quantum cognition hold an alternative to this prevailing view

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Study Identifies Gut Sensor That Propels Intestines To Move

Protein responds to pressure, inflammation, exercise to help food pass through colon

image: myboxpra/iStock/Getty Images Plus

Now a new NIH-funded study led by researchers at Harvard Medical School and the Icahn School of Medicine at Mount Sinai has identified the mechanism behind this phenomenon, showing that the gut's motility is altered by exercise, pressure, and inflammation.

The study results, based on experiments in mice and published March 24 in Cell, reveal that a pressure-sensing protein called PIEZO1 — named after the Greek word for pressure and the discovery of which won the 2021 Nobel Prize in Physiology or Medicine — plays a key role both in coordinating intestinal movements and keeping inflammation in this organ at bay.

If replicated in humans, the researchers said, the findings could inform the design of precision-targeted treatments that tame intestinal inflammation and treat disorders of gut motility, such as diarrhea and constipation.

To explore this idea, researchers analyzed gene activity in mouse and human gut neurons and found that the Piezo1 gene, which produces the PIEZO1 protein, is highly active in excitatory gut neurons — those responsible for triggering muscle contractions in the intestine by releasing the chemical messenger acetylcholine, which helps nerves communicate and propels muscle movement.

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A cold seat in a public restroom is unpleasant.
A warm seat in a public restroom is worse.

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Great Potoo: The 'Tree Stump' Bird Can See with Its Eyes Closed

Throughout the night, great potoos emit a loud, moaning growl that has earned the bird a mythical status, with some communities believing the sounds to be children calling for lost parents.

Great potoos have giant eyes that protrude from the sides of their heads, providing excellent vision in low-light conditions.
(Image credit: Allissondias, CC BY-SA 4.0, via Wikimedia Commons)

The great potoo is a master of disguise. Its mottled gray-brown feathers and ability to remain perfectly still often cause it to be mistaken for a tree branch or stump, helping it evade detection by predators.

Native to the forests and tropical lowlands of Central and South America, this nocturnal bird can grow to 24 inches (60 centimeters) tall and has a wingspan of more than 28 inches (70 cm). Its grey, brown and white plumage helps it blend seamlessly with the bark of the trees it lands on, making it nearly undetectable by other animals.

Great potoos also have slits in their eyelids, which enable them to see when their eyes are closed. These "notches" help the birds to sense light and movement through their shut eyelids, so they can detect predators and prey even when resting.

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Long-Chain Alkanes Preserved in a Martian Mudstone

The detection of long-chain alkanes in the Sheepbed mudstone is important for extending studies of habitability on Mars as the Curiosity rover continues to map out windows of high preservation potential for chemically reduced organic compounds. The provenance and distribution of these molecules are of high interest in the search for potential biosignatures on Mars.

The Martian rock known as Cumberland, which was sampled in the study.
NASA/JPL-Caltech/MSSS

The organic molecules found by Curiosity consist of carbon atoms linked in long chains, with other elements bonded to them, like hydrogen and oxygen. They come from a 3.7-billion-year-old rock dubbed Cumberland, encountered by the rover at a presumed dried-up lakebed in Mars's Gale Crater. Scientists used the Sample Analysis at Mars (Sam) instrument on the Nasa rover to make their discovery.

https://bit.ly/43zmXSe

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Why Do Snakes Shed Their Skin?

Shed snake skin carries the same unique pattern as the snake's skin.
(McDonald Wildlife Photography Inc. Getty Images)

Dozens of times throughout its life, a snake slithers out of its old skin in a process called "ecdysis," leaving behind papery sheds delicately imprinted with the unique pattern of its scales.

It's not unusual to shed skin; humans do it, too. "But unlike us, whose skin sheds off in little flakes, snakes produce a whole new layer of skin, and the old layer of skin falls off in one big slough," said Jason Dallas, a postdoctoral researcher who studies bacterial-fungal interactions in snakes and amphibians at Middle Tennessee State University.

But why do snakes shed their skin, and why does it happen in one go?

Well, here's the answer.

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Aboard the USS Ford Preparing for Deployment

The Gerald R. Ford (CVN-78) is the US Navy's newest and most technologically advanced operational aircraft carrier embarked with thousands of sailors and officers this past March.

navyrecognition.com

COMPTUEX is designed to prepare a carrier strike group for operations in all of the world's hot spots: the Middle East (US 5th Fleet), the Mediterranean (US 6th Fleet) and the Pacific (US 7th Fleet). For now, officials say, the strike group's next deployment will likely begin this summer in the Mediterranean, but those plans are always subject to change — particularly given the volatility of the Middle East.Today, the Ford is the centerpiece of Carrier Strike Group 12, and the most senior officer aboard is Rear Adm. Paul Lanzilotta, a naval aviator who was also once the ship's commanding officer.

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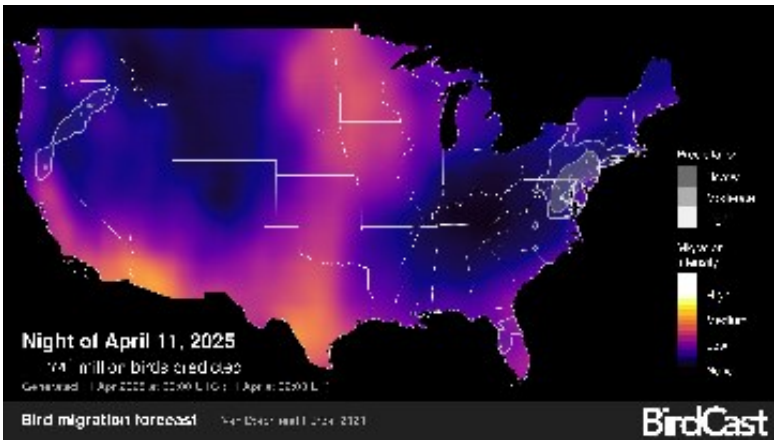
Spring Bird Migration



birdcast

Each spring, hundreds of migratory bird species return to North America from their wintering grounds in Central and South America. This animation highlights just 15 of these extraordinary travelers, offering a glimpse into one of nature's most inspiring phenomena. As these birds navigate cities and landscapes on their way to breeding grounds, we have an opportunity—and a responsibility—to help keep them safe."

Watch as Tennessee Warblers, Swainson's Thrush, Bullock's Orioles, Ruby-crowned Kinglets, the Indigo Bunting, and other feathered globetrotters make their way north:

https://youtu.be/xfiY0tTjKxA

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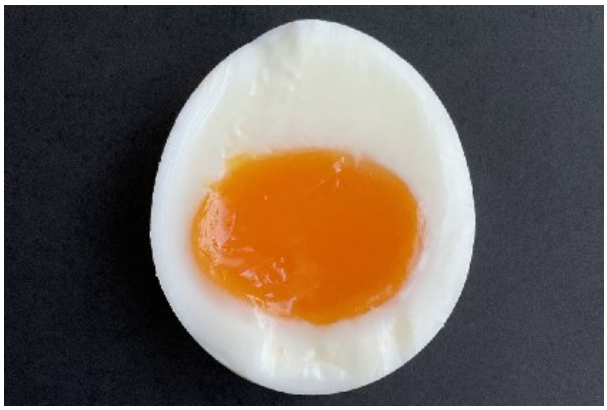
The Science-Backed, 16-Step Method for the Perfect Boiled Egg

The result—if you have the patience—is an evenly cooked yolk, solid white and extra nutrition



It takes 32 minutes to achieve egg perfection, scientists say.
Photo: Ernesto Di Maio

A group of Italian scientists has cracked the secret of how to boil a perfect egg.

The catch? It takes 32 minutes, two containers of water held at different temperatures, and a fastidious chef moving the egg between the containers every two minutes.

The scientists aimed to cook an egg evenly throughout. The conundrum was that an egg's layers—its yellow yolk and white albumen—cook at different temperatures. Eaters risk a chalky yolk if they want a fully cooked white, or a runny white if they want a creamy yolk.

To achieve perfection, Di Maio's group, aided by mathematical models, simulations and experiments, invented "periodic cooking," a method that calls for starting an egg in a pan of boiling water, leaving it there for two minutes, transferring it to a bowl of tepid water at 86 degrees Fahrenheit for another two minutes, and repeating the cycle eight times.

That's 16 steps.

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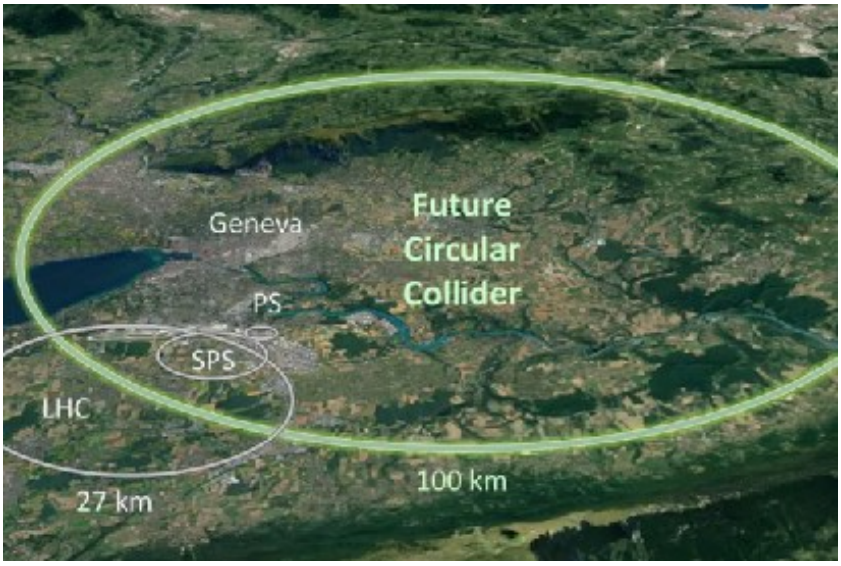
The Future Circular Collider



CERN

While a vast, underground project in Europe created by scientists to slam particles against each at nearly the speed of light seems like a creation of a Bond villain, CERN's Future Circle Collider (FCC) could lead to advances in superconducting materials for medical applications, fusion energy research, and electricity transmission. It would be the heir to the Large Hadron Collider (LHC) that is currently smashing atoms together underneath the French–Swiss border.

Experts also believe the FCC will provide more insight into the Higgs boson, aka "the God particle," which helped explain how matter was formed after the Big Bang. The

Higgs boson was discovered by the LHC but requires a larger particle accelerator for more analysis.

How much larger? The FCC will span 56.5 miles across—three times the size of the so-called Large Hadron Collider—and can produce 10 times more energy, which will allow for the creation of heavier particles and decades of jokes about the Puny Hadron Collider that preceded it.

When will it be done? You know how studios announce a movie that will be released a year or two in the future and that wait seems interminable? We're sorry to report that this $16 billion project won't be approved until 2028, and, if it gets the go-ahead from CERN member countries, the first phase of operations wouldn't begin until the 2040s with phase two starting around 2070.—DL

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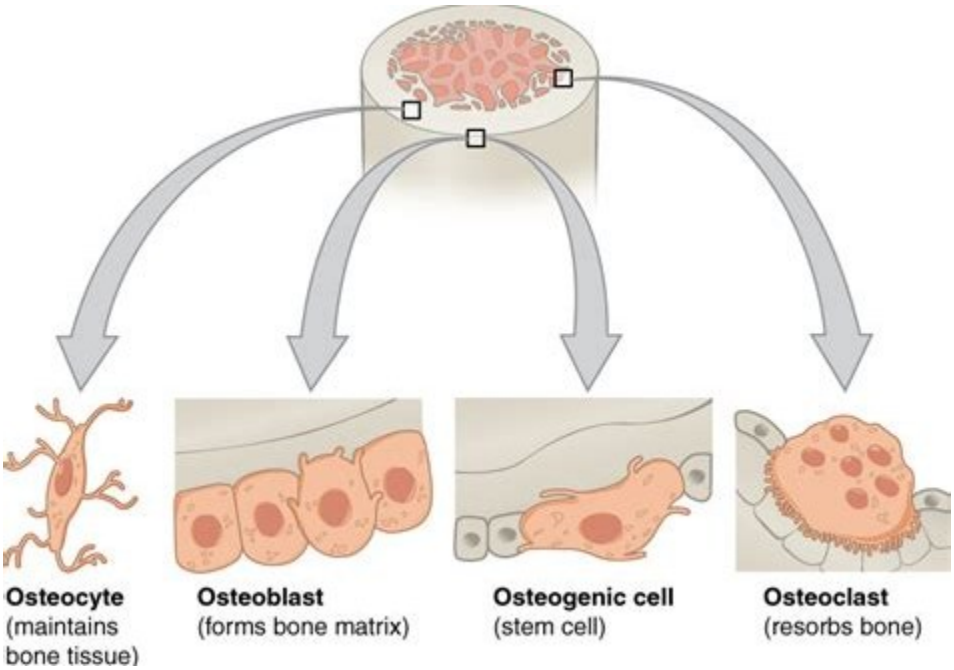
New Details About Skeletal Cell Aging Revealed

It's no coincidence that our bodies feel a little creakier as we age. The trillions of cells that make up our skeleton age too, and some change in ways that weaken the very structure of our bones.



philschatz.com

Aging and stress can induce cellular senescence in osteocytes, resulting in cytoskeletal and mechanical changes that impair their ability to sense mechanical signals, ultimately weakening bone.

Osteocytes are the master regulators of bone health, sensing mechanical forces and directing when to build or break down bone. But when exposed to senescent cells – damaged cells that stop dividing but don't die – osteocytes themselves begin to stiffen. This cytoskeletal stiffening and altered plasma membrane viscoelasticity undermine their ability to respond to mechanical signals, disrupting healthy bone remodeling and leading to bone fragility.

Senescent cells release a toxic brew of molecules, called senescence-associated secretory phenotype (SASP), which triggers inflammation and damage in surrounding tissues. They've been linked to the development of cancer and many other chronic diseases. Until now, most research has focused on detecting senescence through genetic markers, a notoriously challenging task because these markers vary widely across cell types.

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What it Takes to Lead the Blue Angels

alamy.com

Assuming the prestigious roles of Flight Leader and Commanding Officer for the U.S. Navy Blue Angels is a testament to unparalleled expertise and leadership. The position mandates not only orchestrating over 60 flight demonstrations in 30 different locations annually but also the meticulous management of the squadron's 100 dedicated members. Entrusted with this responsibility, the Commanding Officer epitomizes the pinnacle of naval aviation excellence.

This newly crafted short documentary offers a rare glimpse into the demanding yet rewarding world of leading the globe's most revered military flight demonstration team. It features an in-depth interview with Boss Russ Bartlett, who adeptly helmed the Blue Angels during the 2003 and 2004 airshow seasons.

https://youtu.be/1LS9bQYdPSw

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A Canada Goose Nested for Free in the Bleachers at Wrigley Field

Jamie Sabau/Getty Images

You never know what you might see at a baseball game — a proposal, a grand slam, or a gaggle of "geesekeepers" protecting a bird nesting in the stands. If you can believe it, the latter recently went down at Wrigley Field. During the Chicago Cubs' April 5 game against the San Diego Padres, a Canada goose was spotted nestled in greenery boxes around the stadium's outfield bleachers.

The team stepped up to the plate to keep the goose safe, blocking off dozens of bleacher seats, adding signs, and designating staff to keep guard of the new fan. "At the Friendly Confines, we truly mean it when we say everyone's welcome, including the goose and her nest who took up residence in the bleachers," Cubs Senior Director of Communications Jennifer Martinez said in a statement to the Associated Press. She added: "Protecting our fans, and our feathered guest, is our top priority."

The goose flew off sometime Monday, but not before fans had a chance to name her — some went with Suzuki, in honor of designated hitter Seiya Suzuki, while others dubbed the bird Pete Goose-Armstrong (PGA for short), as a reference to outfielder Pete Crow-Armstrong. Though there's no word on where she's at now, the Cubs community knows there's a good luck charm flying around out there.

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I really don't mind getting older, but my body is taking it badly.

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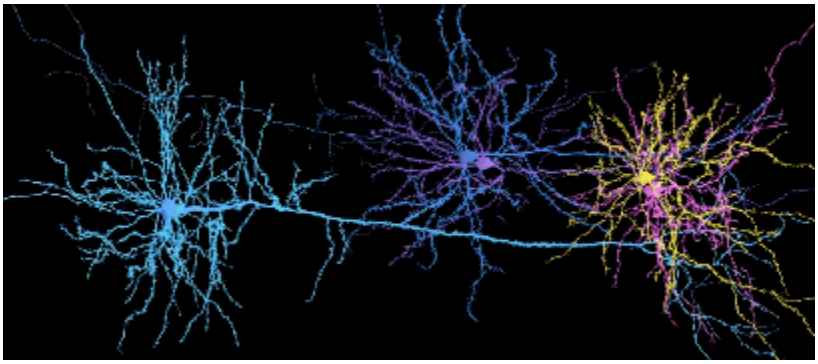
Scientists Map the Half-Billion Connections that Allow Mice to See

After nine years of painstaking work, an international team of researchers on Wednesday published a precise map of the vision centers of a mouse brain, revealing the exquisite structures and functional systems of mammalian perception.



Scientists co-led by Princeton University's Sebastian Seung have mapped the visual centers of a mouse brain, revealing the largest and most detailed look to date at the internal wiring of mammalian perception.
Image by Tyler Sloan, Quarametrix Studio

Using just a cubic millimeter of neural tissue—about the size of a grain of sand—from a mouse's brain, researchers charted the activity and structure of 200,000 neurons and other types of brain cells, along with 523 million neural connections, and produced data equivalent to 22 years of nonstop HD video. To obtain the data, the team played stimulating short video clips for the rodent, including scenes from "The Matrix," and used a sophisticated imaging system to track the animal's brain activity patterns in its visual cortex. Their findings—compiled into a map resembling a galaxy—allow researchers to decode and discover patterns in the brain's wiring that impact functions like seeing, storing, and processing information.

"The technologies developed by this project will give us our first chance to really identify some kind of abnormal pattern of connectivity that gives rise to a disorder," said Princeton University's Sebastian Seung, the Evnin Professor in Neuroscience and a professor of computer science, who co-led the project.

The work was published in a raft of papers on April 9, comprising a special edition of the journal Nature.

https://bit.ly/42uydgw

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Why Our Fingers Wrinkle in Water Goes Much Deeper Than the Skin.

A study of polio patients almost 90 years ago gave scientists their first big clue.

animal life club

Scientists once thought that these wrinkles were due to fingers swelling up like a sponge after being soaked with water. However, the answer has more to do with our nerves than skin.

The skin on the palms of our hands and soles of our feet is called glabrous skin, a name from the Latin word glaber, meaning "bald." This hairless surface plays an essential role in sensing our environment. It is packed with receptors that transmit signals from our skin into electrical impulses that our brain can read.

In a 1936 paper, Sir George White Pickering and Thomas Lewis reported case studies of people with polio-induced nerve damage who had remarkably wrinkle-proof digits. Regardless of how long they spent in water, their fingers remained smooth as marble.

These patients had sustained damage to their median nerve, which runs down the arm and provides motor and sensory links to the hand and forearm. This nerve is an important connection in the sympathetic nervous system.

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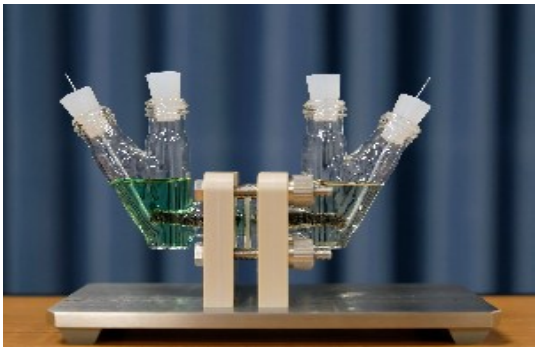
Depleted Uranium Batteries Could Turn Waste into Power

The prototype is a new idea for grid-scale storage



Researchers in Japan developed a battery utilizing depleted uranium that could help mitigate

the inconsistency of wind and solar.
JAEA

Scientists at the Japan Atomic Energy Agency (JAEA) say their uranium battery could help renewable energy sources such as wind and solar farms to provide a stable energy output by serving as a potential alternative to large-capacity lithium-ion batteries. They also say their battery is the first of its kind in the world and they have verified its charging and discharging performance. While still in the early stages of development, the technology could turn nuclear waste into a resource.

The JAEA announced the development in March, and provided a rough outline of the battery technology. While the agency declined to say when or where a paper with more details on the technology would be published, they confirmed some aspects. Specifically, the prototype is a flow battery, a form of energy storage that has been proposed for intermittent renewables like wind and solar. Flow batteries store energy in two tanks of liquid electrolyte solutions, one positively charged and the other negatively charged, with larger tanks providing more capacity.

https://bit.ly/4idFTcA

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I went line dancing last night. OK, it was a roadside sobriety test. Same thing.

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FDA Unveils Pilot Program to Phase Out Animal Testing

Jessica Rinaldi/The Boston Globe via Getty Images

Over the past few years, the Food and Drug Administration has gradually reduced its dependence on animal testing. But now the agency is going a step further, sharing

plans to phase out animal testing requirements — and instead facilitate the use of AI-based models and other "more effective, human-relevant" tools to predict a drug's behavior and possible side effects.

The newly announced pilot program allows select developers of monoclonal antibodies and other drugs to use a non-animal-based strategy, such as computer modeling or organ-on-a-chip systems, rather than having to prove that a new medication or treatment works on animals — the standard practice for decades.

Beyond addressing ethics concerns, the change could be a win for humans: "This initiative marks a paradigm shift in drug evaluation and holds promise to accelerate cures and meaningful treatments for Americans while reducing animal use," Commissioner Marty Makary said in a statement, noting drug prices could also be reduced.

As for animal rights advocates, it's a move many years in the making. "It's a significant step towards meeting the agency's commitment to replace the use of animals," said senior vice president of PETA Kathy Guillermo.

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Ankylosaur Footprints

Footprints of tail-clubbed armored dinosaurs found for the first time

Gobisaurus copyright Sydney Mohr -

Paleontologists have discovered 100-million-year-old fossilized footprints in the Canadian Rockies that reveal the first known tracks of three-toed, clubbed-tail armored dinosaurs, filling a gap in the fossil record.

The footprints belong to an ankylosaurid, part of a larger group of ankylosaur dinosaurs that were heavily armored herbivores from the Late Jurassic to Cretaceous periods, known for their bony plates (even on their eyelids) and spikes. The ankylosaurs have two main subgroups: the nodosaurids, which have a flexible tail and four toes and whose footprints are well known, and the ankylosaurids, which have sledgehammer-like

tails and three toes. Ankylosaurs are estimated to have been up to 30 feet long and weighed over 10,000 pounds.

The footprints (see photos) from the middle of the Cretaceous period, roughly 100 to 94 million years ago, indicate ankylosaurids were present in North America despite the absence of skeletal remains. The discovery suggests both nodosaurids and ankylosaurids coexisted in the same region during the same period.

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Study Finds Crows Have Geometric Intuition

DamianKuzdak/ iStock

Regardless of how you feel about crows, there's one thing we can all agree on: They're super smart. In fact, they may even be star students in geometry class, per a recent study. Researchers found that much like humans, crows can identify shapes that exhibit geometric regularity and recognize those that do not.

For the study, researchers had crows look at a computer screen featuring six figures. If they pecked on the shape that was different from the rest, they would get a mealworm treat. At first, the researchers used two vastly different shapes, like five moons and one flower, but gradually made the shapes more similar — such as five perfect squares and one four-sided figure that was subtly different.

Living up to their reputation, the crows could identify the outlier in both simple and complicated scenarios. It's the first time a nonhuman species has been shown to have this geometric intuition, according to co-author Andreas Nieder, a cognitive neurobiologist at Germany's University of Tübingen. "Claiming that it is specific to us humans, that only humans can detect geometric regularity, is now falsified," Nieder told NPR. "Because we have at least the crow."

But that's not to say the crow is the only other animal with this perceptive skill: "I would never dare to say that this is the only species," he said. "It's just now opening

this field of investigation." We wouldn't be surprised to see this other misunderstood bird on the geometry honor roll.

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Snowy Owl with Orange Plumage That Has Confused Scientists

snowy owl tinged with orange plumage in Michigan.
Photo by Julie Maggert

"There are some speculations that her coloring may be a just color mutation or overspray from airplane de-icer or paint," Maggert tells PetaPixel. "Whatever it may be, she is a once-in-a-lifetime beauty and seemingly healthy."

The Michigan Department of Natural Resources agrees that the bird is healthy and it has no plans to capture it, meaning it is unlikely we'll ever get an official explanation.

https://bit.ly/4jcYbvW

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Late one night (5:22 pm), while watching TV, the old man gets up from his chair 'Want anything while I'm in the kitchen?' he asks.

'Will you get me a bowl of ice cream?'

'Sure.'

'Don't you think you should write it down so you can remember it?' she asks.

'No, I can remember it.'

'Well, I'd like some strawberries on top, too. Maybe you should write it down, so as not to forget it?'

He says, 'I can remember that. You want a bowl of ice cream with strawberries.'

'I'd also like whipped cream. I'm certain you'll forget that, write it down?' she asks.

Irritated, he says, 'I don't need to write it down, I can remember it! Ice cream with strawberries and whipped cream - I got it, for goodness sake!'

Then he toddles into the kitchen. After about 20 minutes, the old man returns from the kitchen and hands his wife a plate of bacon and eggs. She stares at the plate for a moment.

'Where's my toast?'

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Nuclear Microreactors That Could Power US Bases

A rendering of the MARVEL microreactor planned for testing at Idaho National Laboratory. *(Department of Energy)*

WASHINGTON — A budding effort between the Defense Innovation Unit (DIU), Air Force and Army to shore up homeland installations with nuclear energy powered by microreactors is moving forward after the DoD determined eight vendors are now qualified to proceed with demonstrating the technology.

The Department of Energy describes microreactors as providing 1-20 megawatts of power, while being a transportable size — think of something that could fit within a shipping container. The ANPI effort aims to build more resilient energy grids for military bases with "fixed on-site microreactor nuclear power systems." Among other goals, the program intends to "field a decentralized scalable microreactor system" that can "meet 100 percent of all critical loads" and invigorate the commercial market for nuclear microreactor technology, according to the DIU release.

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Waste-to-Hydrogen in Indonesia to Drive Clean Energy Transition

Hyundai Motor Group is kicking off an ambitious new chapter in Southeast Asia — launching a waste-to-hydrogen production initiative in Indonesia that aims to tackle two massive challenges at once: carbon emissions and mounting waste.

hyundai

The project's goal is simple but powerful — turn everyday municipal waste into clean-burning hydrogen fuel. That hydrogen will then be used to power fuel cell electric vehicles (FCEVs) like Hyundai's Nexo SUV and the Xcient Fuel Cell heavy-duty truck. It's

not just about expanding Hyundai's global hydrogen reach — it's about creating a full-circle green solution that fits the realities and needs of a developing economy.

So how does it all work? At the heart of the plan is cutting-edge waste-to-hydrogen technology. Processes like gasification and anaerobic digestion will break down trash into a hydrogen-rich syngas. From there, the hydrogen is purified and sent straight into FCEV powertrains — turning city garbage into zero-emission fuel.

https://bit.ly/4ieG1bT

Anaergia Inc.'s subsidiary SoCal Biomethane, LLC, has supplied renewable natural gas to FuelCell Energy's Tri-gen system to produce carbon-negative hydrogen and electricity for Toyota Motor North America, Inc.'s Logistics Services Center at the Port of Long Beach in California.

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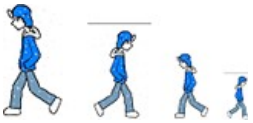
My Walking Thoughts



For Sunday April 27 2025

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Miss Apfelbaum No. Two : An Outtake from Phantoms from Vietnam

Miss A, however, reveled in such disruptive behavior, looking forward to matching wits with minds that were still open to nearly everything, and not ashamed to question simple authority. She saw in their youthful enthusiasm the opportunity to turn the tables on the bright ones, asking them the whys underlying their questions and thoughts, a technique she put into practice within two minutes of the start of the school year, neglecting the exploits of her brother on a manicure grass field 3,000 miles to the east where the leaves were just beginning to take on their autumn colors.

"What is it that you want to know about why school begins at eight in the morning?" she responded to Bonnie Alvarez's challenge, putting the little fireball on the hot seat for a moment.

"Because my family begins its day at 4:30, my father and brothers tend the farm before going to work at the Kern Canyon Hydroelectric Project. They have to be there at 6:45 and don't get home until nearly six in the evening."

"That's important work, Bonnie" she skillfully guided the subject along a more fruitful path. "Do you know why?"

"They keep power going to this whole area."

"Do you know how it works?"

"It uses water in the Kern River to turn huge…uhh they call them dynamos…to generate electricity that is then transmitted to power stations around the area." Bonnie words were reminiscent of those found in the electric utility's handout.

"It sounds as if you know quite a lot about the system," and turning to the class as a whole, "Does anyone want to ask Bonnie some questions?" And right from the start the rest of the morning or afternoon as was the case would be taken up on topics such as this introduced by students.

Miss A loved watching the students get into such things, thinking that with her specials like Bonnie, Nancy, or Gordon, she really didn't have much to do in the way of lesson planning. Moreover, as September passed into October, the number of why questioners had grown to where there were only three of her 30 charges yet to find the thrill of challenge the status quo.

Miss A was careful in conducting discussions on current events—the war in particular—convinced that the majority of information passed to the public by the radio, newspapers, and especially magazines was doctored to fit the agenda of the Washington bigwigs. So when Jimmy Hartley made the flat statement that "All the dirty Japs in the country should be taken out and shot," his reaction to a piece in Time magazine about atrocities in the Pacific Theater, she was on the verge of shutting down discussion of the topic when Gordon spoke up in rebuttal.

"Jimmy," he said firmly but without rancor, "there may be enemy sympathizers among the thousands of Americans of Japanese descent, but they aren't a threat to the nation. Most, are like the Nakanos, honest citizens who are being treated as criminals for no good reason." Jimmy as well as the majority of the class sat silent waiting for Gordon to continue, which he did after looking at Miss A for a reaction that was not forthcoming.

"Every other month or so, my father and Pastor Jacobs make the trip to the other side of the Sierras to visit George and his family at Manzanar, taking items like soap and toothpaste and cold weather clothing for them and their friends. My father calls Manzanar a concentration camp no better than some our soldiers are forced to endure while in enemy hands, yet George's older brother, Ralph Jr., signed up with the Army and is now somewhere in Europe fighting for us, not Japan. We all ought to be ashamed of ourselves."

Silence. More silence. It was as if no one in the class was even breathing. Finally Miss A got things moving again.

"Anyone like to respond to Gordon?" No, she thought. He had stepped out from the curtain behind which he had hidden since the beginning of the school year and in so doing proved to be the most special of the specials.

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"How many of you remember George Nakano?" she asked, challenging the class to take part in a discussion she hoped they might carry with them for the rest of their lives…a watershed challenge to the empty beliefs that surrounded them, she opined, her blood warming to a hoped for battle. Ragged at first but within a half dozen seconds all but two—maybe three—hands were in the air.

What do you think, Nancy" she put the onus on another of the specials to kick-start some discussion.

"My father says the same thing," she said, kindling the fire. "He says that after the war is over, the President is going to have a lot to answer for."

"Yes, but what do you think?"

Nancy frowned for a moment before continuing.

"My mother thinks that we're a lot safer with the Japanese locked away where they can't attack us in the middle of the night."

"Yes, Nancy, but I'll ask again. What do you think."

"I don't know," she said, looking as if she were about to cry. "We hear all these terrible things about their soldiers. What's to say that the Japanese who are here are not just as bad?"

"Yeh," called Peter Randolph from the back row. "My Uncle Bill was wounded at Guadalcanal. He says that the Jap soldiers are fanatics, willing to die rather than be captured. They're different from us."

Back and forth the discussion wove along various pathways, veering this way and that but always coming back to Jimmy's condemnation and Gordon's defense of the Japanese being held in relocation camps with no consensus looking to emerge.

Finally Miss A felt it time to step in.

"Tell me Jimmy, how about Americans of German descent like Nancy Goldsmith, or Greta Steinberg… or me. Should we be hauled away in trucks and put into relocation camps?" No answer from Jimmy.

"How about Paulo Frascatti, or Joey Rossi? We're fighting the Italian army. Should they and their families be incarcerated so the rest of us will be safe?"

"Well…no," Jimmy began haltingly."

"Why not," Miss A pounced, but certain where this would lead."

"Well they're like us."

"And Japanese like the Nakanos aren't? Why's that?"

"Because…because…"

"Because what? Because their skin is a different color? Because they are racially different? Is that what you have in mind, Jimmy?" She let the challenges hang there in mid-air until she sensed that she had gone far enough for the time being.

"I'm sorry Jimmy. I need to apologize to all of you, but I want to make sure you understand the terrible risks we run in stereotyping." After several seconds in which she allowed for the change in direction, she continued.

"We are all afraid of differences. Terrified of things we don't understand. These are normal and rational reactions to a world filled with threats as well as opportunities… mechanisms that have allowed us to survive throughout the ages, yet move forward.

Do we fight or flee? Or do we hang out to see if there are better options? There are no simple answers here, rather questions that I hope you'll spend time thinking about and discussing with others for the rest of your lives.

At home that evening Gordon talked about the classroom situation and his stepping in to counter Jimmy Hartley's solution to the Japanese-American issue.

"I don't think Jimmy really meant what he said about shooting all the Japanese here in our country, particularly because he and George Nakano were good buddies before the war started, but still I felt I had to say something."

"Did you talk with him after school," Claire asked. She was sensitive to the way things sometime got blown out of proportion.

"Uh-uh. We were late getting to the bus and he was sitting way up front by the time I got there."

"Well look," she suggested, "how about taking him aside first thing tomorrow morning to tell him you weren't picking a fight with him, that you wanted to remind everyone there about the Nakano family and the suffering they and hundreds of others are exposed to through no fault of their own."

Gordon took the suggestion and he an Jimmy discussed the matter before school, Jimmy admitting that he wasn't really talking about the internees like the Nakanos, but the soldiers and secret spies who were capable of the most vicious behavior found anywhere on the planet. And by day's end they walked to the bus arm in arm…best buddies. Miss A, watching them through the classroom window, had to smile.

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