

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be Wednesday, March 12 at 12:30 in the GSA trailer.

Science Report Highlights

Betsy and Dan thought all the items in following science report from Charles were interesting but most liked the following:

- Worst Flu Season In 15 Years
- Measles Outbreak
- FDA Review Of Medical Devices
- New US Facility For Manufacturing Solar Panel Components
- NASA Arranges Two More Private Enterprise Lunar Landings
- New Air Defense System To Ukraine From UK And Denmark
- Ukrainian Drones Are Increasingly Lethal
- Last Missing Tomb Of Eighteenth Dynasty Pharaohs Discovered

Science Report

Self-Protective Measures -

You should get your medical advice from official sources, your doctor, or your pharmacist ... not from this Report or the internet. Per recommendations by FDA and CDC, everyone should maintain current vaccinations for the three respiratory viruses: Covid, flu and RSV (for RSV, adults [over 60](#) and children [younger than 8 months](#)) - unless your doctor advises against it based on your medical record. Adults over 50 should have had the [Shingrix vaccine for shingles](#) (two doses 2 to 6 months apart, good indefinitely). Adults over 50 should have the [Pneumococcal Vaccine](#).

- [Worst Flu Season In 15 Years](#) - filling hospitals ([intensive care](#) beds, personnel), shutting down schools, **19,000 flu-related US deaths** ... details [here](#). RSV, Norovirus and Covid [infections](#) have also remained high. Why? The unusually cold winter has kept people indoors and in contact with each other. Two different strains of the flu (H1N1 and H3N2) have been circulating at the same time. Vaccination rates are down. The season isn't over yet. Update your vaccinations ASAP.
- [NIH BMI Calculator](#) - Use the [NIH](#) National Heart, Lung and Blood Institute [calculator](#) to find your Body Mass Index (BMI). Above 25 - overweight. Above 30, check with your doctor, consider better nutrition, and exercise.
- [Basal Metabolic Rate \(BMR\)](#) - Your BMR is how many calories you burn just sitting in your chair. Use the [calculator](#) to get your BMR. Then consult the exercise table to see how many calories you can consume daily with your current exercise plan and still maintain your current weight.
- [Body Roundness Index \(BRI\)](#) - is a new medical screening tool for estimating *visceral* fat, [details](#). Use a calculator to get your BRI [here](#). Additional background from Harvard, [here](#). Results to your doc.

Vaccine and Therapeutic News -

- Cerebrotendinous Xanthomatosis - FDA has [approved](#) a *first* treatment for this rare lipid disorder, [Ctexli](#) (chenodiol), to treat diseases such as cerebrotendinous xanthomatosis. [Mirum Pharmaceuticals](#) (Foster City CA).
- Dust Mite Induced Nasal Inflammation - FDA had previously approved [Odactra](#), an allergen extract immunotherapy administered under the tongue (sublingual), for patients 12-65. FDA has now extended this approval to cover children 5-11.
- Software For Glucose Monitors And Insulin Pumps - FDA had previously cleared [Tandem Diabetes Care's](#) (San Diego CA) Control-IQ+, a software-only glycemic controller, limiting its use to patients with Type 1 diabetes. The software is intended for use with compatible glucose monitors and pumps to automatically increase/decrease/suspend delivery of insulin based on glucose readings and predicted values. [FDA's new clearance now also covers patients 18+ with Type 2 diabetes.](#)
- Deep Brain Stimulation For Parkinson's Disease - FDA has cleared a software update for controlling the [Medtronic](#) (Minneapolis MN) Activa Percept and SenSight Deep Brain Stimulation Therapy System. The [Activa](#) system delivers low-intensity electrical pulses to certain nerve centers in the brain as part of deep brain stimulator therapy for Parkinson's Disease.
- Longevity Drug For Senior Dogs - The San Francisco animal drug start-up 'Loyal' has [announced](#) that FDA's Center for Veterinary Medicine (CVM) has accepted the Reasonable Expectation of Effectiveness part of its application for LOY-002 for extending the [lifespan of senior dogs](#) (aged 10 and older weighing at least 10 pounds). The company expects to meet FDA's manufacturing and safety requirements by the end of 2025. Note: CVM has recently experienced staff reductions.
- Measles Outbreak - [Update 2/25](#): 124 confirmed cases in TX (including 18 hospitalizations and 1 fatality, all unvaccinated children), and [9 cases across the border in NM.](#) CDC statement, [here.](#) [Update 3/4](#): 159 confirmed cases and 22 hospitalizations, [CDC is on the ground there now.](#)
- First 2025 Measles Case In Florida - A Miami high school student has tested positive. [Details.](#)
- Adult Measles Vaccine Booster Needed? - According to a [Vanderbilt University infectious disease expert](#): "If you have been vaccinated with two doses of vaccine, as per routine, you have a 95-plus percent chance of being completely protected throughout your life". Exception: The Johns Hopkins Medical School [recommends](#) that those vaccinated between 1963 and 1968 get at least one dose of the current vaccine. "Older adults who were born before 1957 are presumed to have naturally induced immunity, because they were likely exposed to measles before vaccines became available."

Other Health Science News -

- FDA Review Of Medical Devices - such as pacemakers, neural implants, cardiac stents, insulin pumps for diabetes, and other high tech devices may be slowed by recent staff reductions. The CEO of the medical device industry group [AdvaMed commented](#): "The overwhelming majority of those who will be terminated as a result of this are recent hires ... *funded through user fees.* So as a result of that, the federal government will *not save money.*" [Medical Device User Fee and Modernization Act of 2002.](#) Update 2/25: Many of the staff released last week [have now been brought back.](#)
- Eli Lilly Increases Investment In US-Based Pharmaceutical Manufacturing - from 2020 by \$50 billion. [Details.](#) The company describes this increase as the largest manufacturing investment by a pharmaceutical company in US history - new sites in Research Triangle Park NC, Concord NC

and Lebanon IN; expansions and updates to manufacturing facilities in Indianapolis IN; new Lilly Medicine Foundry in Lebanon IN; acquisition and expansion of a manufacturing site in Kenosha County WI.

- Are Your Stools Healthy? - Check the Bristol Stool Chart [here](#). Ideally you should be a Type 3 or 4. This simple check, that you can routinely do yourself in a few seconds, may help catch a problem early, and could provide important information for your doctor [Details](#).

Practical Nutrition -

- Best Tea For Lowering Inflammation - according to a registered dietician is ginger tea, [here](#).
- Are Pistachios Healthy? - A registered dietician says **yes**, and lays out a long list of benefits, [here](#).
- The Unhealthiest Chicken Dishes At Fast Food Restaurants - rated by a registered dietician, [here](#).
- Misleading Words For Sugar - High-fructose corn syrup, sucrose, barley malt, dextrose, maltose and rice syrup are all [forms of sugar](#). Certain blood alcohols sometimes used as sweeteners, such as Erythritol and Xylitol, are made by the body and occur naturally in certain foods - but in very small amounts. They have recently been [linked to heart disease and stroke by Cleveland Clinic researchers](#), and should be avoided as food additives. Chemical sugar substitutes to be avoided: acesulfame potassium, advantame, allulose, aspartame, brazzein, lactitol, maltitol, mannitol, neotame, rebaudioside A (reb-A), saccharin, sorbitol, thaumatin and trehalose.
- Is Your Favorite Food Ultra-Processed? - and if so, what's a good substitute. View the Northeastern University [TrueFood Dashboard](#).
- Most Nutritious Vegetables and Fruits Rank-Ordered by CDC - See the list [here](#). Chinese cabbage = bok choy.

Environmental Science News -

- Big Bear Valley Live Eagle Cam - See bald eagles Jackie and Shadow on their nest in Big Bear Valley, [here](#). Hatching in progress. [full screen, Louise F.]
- Virtual Power Plants In Texas - The [Bandera Electric Cooperative](#) (Bandera TX) is running a pilot project allowing homeowners in Hill County TX to install solar arrays and batteries that can exchange power with the grid depending on demand. The homeowner earns credits for the power provided to the grid. [Details](#). [Harvey B.]
- Solar Power Is Booming In Asia And Europe - Balcony solar for apartment dwellers in Berlin and Bonn Germany, homeowner rooftops in Spain's Costa del Sol. Details and charts [here](#). The Netherlands and Germany are leading in the EU. They're doing it to save money! [Sonja B, Hugo]
- Airports And Solar - Airports require stand-off space, and their buildings are usually flat-roof structures. These otherwise idle assets are a solar opportunity. Rome's [Fiumicino Airport currently operates a 22 MW solar farm](#) that spans 1.6 miles along one of its perimeters, with plans to expand to 60 MW. Airports in Brisbane Australia, Dubai in the UAE, Dulles Airport in the US, and the airport in Singapore are also going solar. Productive, cost-effective and environmentally smart!
- North America's Largest Urban Solar Plant - The city of [Medicine Hat](#) in Alberta Canada, which gets [more sun than any other Canadian city](#), is bringing in [DP Energy](#) (Cork Ireland) to repurpose a 1,600-acre plot of contaminated land for solar power production. The contaminated land will be capped by clay before the panels are installed. The initial phase of the [Saamis Solar Park](#) will

generate 75 MW at a cost of \$120 million, growing to 325 MW when fully developed - enough to meet peak load demand for the entire city.

- [Will Montana Have Community Solar](#) - like 44 other states? The Montana state Senate has passed a bill that would set-up the legal framework in Montana ... with broad support. The cities of Bozeman and Missoula are already onboard. Montana's two utilities are opposed. Stay tuned.
- [New US Facility For Manufacturing Solar Panel Components](#) - There are a number of plants in the US that assemble solar modules, but domestic production of the components that go into them is limited. [Silfab Solar](#) (Canada) is opening a new plant in South Carolina that will initially produce 1 GW of US-made solar cells as well as 1.3 GW of modules. The company has \$100 million in new financing to scale-up solar cell manufacturing, starting with its existing 800,000 ft² SC plant.
- [US Sourced Solar Supply Chain Comes Of Age](#) - [Nextracker](#) (Fremont CA), with various partners across the US, has built [25 factories to make all the components for solar tracking arrays domestically](#) - torque tubes, fasteners, slew drives, dampers, motors, controllers, rails, and more. Now, for the first time, their [100% domestically sourced trackers](#) will be used in SB Energy's [Pelican's Jaw](#) 570 MW solar and 954 MWh storage project - under construction in Kern County CA.
- [Grants And Loan For Developing Rural Renewable Energy Projects](#) - On January 10 the US Department of Agriculture [announced](#) the award of \$6 billion in grants and loans to back rural renewable energy projects across the US.
- [UK And France Explore New 1GW Grid Interconnect](#) - The two countries already share 4 GW of interconnected power. Details of the new proposed interconnect are under discussion. [Jules M.]
- [\\$1.7 Billion PJM Grid Upgrade](#) - [PJM](#) is the organization that coordinates the flow of wholesale electricity in its 13-state region and DC (includes all three DMV jurisdictions). [American Electric Power](#) (Columbus OH) and its affiliate [Transource Energy](#) (Kansas City MO) will do the work - acting ahead to avoid potential grid instability, and allowing faster connection of new energy sources ... hopefully including sustainable energy. The plan includes two 765 kV transmission lines in West Virginia, Virginia, and Maryland.
- [GM Out, Toyota In](#) - GM is planning to sell its stake in an [EV battery manufacturing facility in Michigan](#) to its joint venture partner there, LG Energy Systems - the plant is expected to open soon. Toyota will support operations with a \$1.5 billion order. Toyota's first US battery plant, Toyota Battery Manufacturing North Carolina, is ready to begin production, and [will begin shipping batteries in April](#).
- [Back From The Brink Of Extinction](#) - The [Olive Perchlet](#) population in the river systems of Victoria, New South Wales Australia remained only in a few protected spots, and was threatened with extinction. A [restocking effort is now showing success](#) in restoring them, and reestablishing them as an important link in the food chain supporting waterbirds and other predator species. Success!
- [Washington State Permanently Bans Commercial Fish Farming](#) - [No more open water net-pens](#) in state waters like Puget Sound. This will help [safeguard wild salmon](#), and other species like orcas.

Other Science News -

- [First Privately Financed Orbital Launch From Western Europe](#) - The German start-up [Isaar Aerospace](#) (Munich Germany) has successfully completed the second launch pad test firing of the booster (9 Aquila engines) for its 'Spectrum' rocket at [Andøya Spaceport](#) in Norway. The

second stage was successfully tested in 2024. The fully assembled rocket is 92 feet tall, carries a payload of 2,200 pounds, and burns a mixture of propane and liquid oxygen. [Details](#) [Sonja B., Hugo]

- [NASA Arranges Two More Private Enterprise Lunar Landings](#) - [Details](#). Blue Ghost is now operating on the lunar surface. The [Intuitive Machines IM-2](#) mission will place its lander Athena at Mons Mouton, with a [variety of payloads including 'Grace', the hopping drone](#) - new way to cross the cracks and crevasses of the moon's rugged surface.
- [Ariane 6](#) - The French company Arianespace has scheduled a launch this week from Europe's spaceport in Kourou, French Guiana, reestablishing European access to space independent of the US or Russia. The heavy lift rocket (Vega-C launcher) will be carrying a French military satellite (CSO-3) to complete a network of three French military imaging satellites - allowing the French army to receive extremely high-resolution images. Five additional launches are scheduled this year. Breakthrough! 3/6 Update: Launch successful, satellite deployed, telemetry received.
- [New Air Defense System To Ukraine From UK And Denmark](#) - The [Gravehawk](#) is the size of a shipping container, and retrofits Soviet era short range (20 miles) air-to-air missiles (R-73 or AA-11) for ground-to-air defenses ... allowing Ukraine to use missiles it already has. Two prototypes have already been successfully tested in Ukraine, and 15 more will be delivered in 2025. Clever, cheap!
- [Europe Steps Up](#) - The UK has [announced](#) that the French-owned defense company Thales will produce 5,000 air defense missiles for Ukraine at its arms factory in Belfast UK (\$2 billion) ... lightweight, multirole missiles already in use by Ukraine. A partner Ukrainian firm manufactures launchers and command and control vehicles for the missiles. Background details [here](#).
- [Ukrainian Drones Are Increasingly Lethal](#) - [99% are made in Ukraine itself](#), from a few thousand in 2022 to more than 1.5 million in 2024! In 2025, domestic production is expected to reach 5 million!! Surface and sub-surface ocean-going drones have already made their mark, and [ground based drones](#) are now on the rise. The US defense industry has things to learn from Ukraine.
- [EU Investment In Ukraine-Based Defense Technology](#) - is [growing](#), and beginning to show results.
- [Germany's Rheinmetall Ramps Up Defense Manufacturing](#) - by [repurposing two auto factories](#) (in Berlin and Neuss) to work on defense-related equipment. [Sonja B.]
- [Taiwan Regulations Prevent Transfer Of Most Advanced Chip Tech](#) - As a result, the most advanced chips made in [TSMC's](#) new US chip foundries in [2025-6 will make the N3 \(3 nm details\)](#). 2025 production is to the N4 and N5 detail size. N2 (2nm) is projected for the end of the decade.
- [Last Missing Tomb Of Eighteenth Dynasty Pharaohs Discovered](#) - In February the Egyptian Ministry of Tourism and Antiquities announced that a British/Egyptian archeology team had discovered the long missing tomb of Thutmose II, while investigating an apparently insignificant side passage of a different tomb ... he ruled from 1493 BCE to 1479 BCE. His mummy had been found some years ago, reburied in a different location in ancient times, probably to avoid flooding. Modern CT X-ray and DNA analysis techniques allow very precise lineage tracing. [Details](#).

[Nice Thing](#) - One of the most beautiful love songs ever written. [full screen] [Jenna D., Maureen T.]

- [The First Time Ever I Saw Your Face](#) - [Originally](#) a 1957 folk song written by British political singer/songwriter Ewan MacColl for Peggy Seeger, later his wife - Taken to the next level, and made internationally famous by Roberta Flack in 1972 - [here](#).

- The First Time Ever I Saw Your Face - Celine Dion - [here](#). The final frames of the video use close-up views to magnify body language, especially hands and fingers, translating the memes of the 60s into current physical dialog. Simultaneously delicate and visceral. In memory of Roberta Flack.