

Betsy says HI!!!!

Announcements

**The next LABQUEST meeting will be Wednesday, July 14 at “WeAchieve”,
10501 New Hampshire Ave.**

Science Report Highlights

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

- [Allergy Seasons Are Getting Longer And More Intense](#)
- [Grandma Brain](#)
- [Habit Stacking](#)
- [Thymus Gland](#)
- [Essential Tremor Vs. Parkinson's Disease](#)
- [Next-Gen Nuclear Reactor Breaks Ground In Kemmerer Wyoming](#)
- [Water Trouble In Corpus Christi Texas](#)

Science Report

Vaccination and medical advice should come from your doctor or your pharmacist ... not from this Report or the internet. Everyone should consider maintaining current vaccinations, and many states are simplifying vaccine access.

- [Allergy Seasons Are Getting Longer And More Intense](#) - Pollen map [here](#). Plants are producing as much as 20% more pollen than 50 years ago, and the [trend is progressing](#) due to climate change ... [temperature](#), CO2. One [published](#) study projected that by the end of the century pollen season will start 40 days earlier, and end 15 days later. [CDC data](#) show that 30% of Americans already have seasonal allergies. Consider upgrading the air filter in your home to at least MERV-13. Also have the cabin air filter in your car routinely cleaned/replaced when you have it serviced, and/or make sure that any new car does *have* one.
- [Covid-19 Vaccination May Aid Those With Lung And Skin Cancer](#) - A research paper [published](#) last October concluded that the vaccine, when administered to non-small cell lung cancer and **melanoma** patients within 100 days of starting immunotherapy drugs (immune checkpoint inhibitors), produced better outcomes. This fits with earlier [published](#) research from the University of Florida. [Background](#). [Barbara R.]

Vaccine and Therapeutic News -

- **Endometrial Cancer** - [BioNTech](#) (Mainz Germany) and [DualityBio](#) (Shanghai China) have [announced](#) encouraging preliminary results from the Phase 2 human trial of

their candidate medication for this indication, trastuzumab pamirtecane (BNT323/DB-1303). A global Phase 3 trial is currently in progress. Stay tuned. DualityBio has [announced](#) that this medication is also under review in China for treatment of breast cancer.

- Genetic Hearing Loss - FDA has [approved](#) the first ever gene therapy for this condition, Otarmeni (lunatogene parvec-cwpa) from [Regeneron Pharmaceuticals](#) (Tarrytown NY). A postmarket study will be conducted. [Details](#).
- Deep Sleep Can Help Suppress Tinnitus - and the reverse, according to recently [published](#) research. [Details](#).
- Chest Congestion - is usually due to excess mucus in the airways. Some mucus is normal, according to the chief of the Division of Pulmonary and Critical Care at the University of Michigan Health, and is cleared by periodic coughing. Other causes may be acid reflux, asthma or allergies. [Details](#), and some [CDC recommendations](#).
- Unexpected Benefit Of Weight Loss Drugs Based On Tirzepatide - the active ingredient of both the [Eli Lilly](#) (Indianapolis IN) diabetes drug Mounjaro, and the company's weight loss drug Zepbound. Two studies ([Study 1](#), [Study 2](#)) have associated tirzepatide with a significantly lower incidence of cardiovascular events.
- Osteoarthritis - is the third most common US disease (one in six over age 30 worldwide). It causes the decay of cartilage that normally keeps bones from grinding together (hips, knees, elbows). In time it can also damage the bone itself, and make movement excruciating. Researchers at the [University of Colorado at Boulder](#), funded 2 years ago with \$33.5 million from the US Advanced Research Projects Agency for Health ([ARPA-H](#)), have reported [encouraging Phase 1 testing results](#) - **reversal and regeneration!** Phase 2 testing has now begun. Congrats to UC Boulder, and thanks to ARPA-H.
- Genetic Profiling For All Solid Tumor Cancers - [Tempus](#) (Chicago IL) has [announced](#) that FDA has approved 'Tempus xT CDx', a 648-gene tissue-based assay intended for molecular profiling of *all* solid tumor cancers ... and colon cancer. Clinical significance overview, [here](#). [Amy S.]
- Glucose Monitor For Children - FDA [cleared](#) for marketing the first *over-the-counter* continuous glucose monitor for children >2 ... the [Stelo](#) Glucose Biosensor System from [Dexcom](#) (San Diego CA), previously cleared for 18+.
- Opioid Overdose Nasal Spray - FDA has [approved](#) nasal spray [Rextovy](#) for this indication, on an over-the-counter basis ... 4 mg naloxone hydrochloride nasal spray for the emergency treatment of opioid overdose. [Amphastar Pharmaceuticals](#) (Rancho Cucamonga CA). CDC data on overdose deaths, [here](#).

Other Health Science News -

- Grandma Brain - is a real thing, according to the MRI-scan-based research of a Professor of Psychiatry and Behavioral Sciences at Emory University (Atlanta GA). He scanned the brains of 50 grandmothers, and measured levels of oxytocin (aka *love hormone*) in their saliva, while showing them photos of their grandchildren. When a grandchild was smiling or crying, the areas of the

grandmother's brain associated with *emotional* empathy lit up, indicating that they were *feeling* the same emotion. When the grandmothers were shown pictures of their sons or daughters, the area of their brains associated with *cognitive* empathy lit up, the different area of the brain involved in *understanding* emotions.

[Details](#). Some studies have indicated that grandparents who help take care of their grandchildren have lower mortality rates. Grandfathers weren't studied.

- [Habit Stacking](#) - According to the [Cleveland Clinic](#) (Cleveland OH), "Your brain loves a good routine" ... the order in which you put on your clothes when you dress, the route you take when commuting to work, etc. You can use those established patterns to train yourself to do important new tasks you've been *forgetting*. Write down a list of your routine habits, and a second list of habits you would like to form. To start out, choose something *small* from the second list and pair it with a compatible item from the first list - *stacking*. Work on that until the second item becomes part of the habit for the first item. Example: You have a habit of showering each night just before bed, and you want to establish the habit of applying moisturizer to dry or itchy or eczema-prone skin areas as a preventive measure ... important, but boring. Each night, right after your regular shower, while your skin is still a bit moist, take two minutes to apply moisturizer. Repeat this *stacking* until it's automatic. Yes, men *do* moisturize.
- [Thymus Gland](#) - was thought to be irrelevant in adulthood, but [according to Harvard Medical School two new studies have changed that](#). The [first](#) showed that individuals with low thymic health have a shorter lifespan, and an increased risk of cancer and cardiovascular diseases. The [second](#) showed that thymic health is strongly associated with immunotherapy outcomes across several cancer types ... lung cancer, **melanoma**, renal cancer, breast cancer. [Barbara R.]
- [Essential Tremor Vs. Parkinson's Disease](#) - Tremors due to the 'Essential Tremor' (ET) disorder involve rhythmic shaking, and occur during movement. Tremors due to 'Parkinson's Disease' (PD) occur at rest. The two [very different conditions](#) are not related. ET is 8 times more common, and affects about 10 million in the US. [Details](#).
- [Vitamin D And Calcium](#) - are best taken together, along with some healthy fat, since Vitamin D is fat soluble. Vitamin D helps the body absorb Calcium ... without it, as little as 10% of dietary Calcium is absorbed. [Details](#).
- [Oral Administration Weight Loss Drug](#) - [Viking Therapeutics](#) (San Diego CA) is conducting human trial testing of its candidate medication for this indication, [VK2735](#), in both injectable and **tablet** form ... initial results promising.

Practical Nutrition -

- [Vitamin B6](#) - See a list of natural foods with this vitamin, [here](#). [CC]
- [Greek Style Pan Chicken/Potatoes/Veggies/Olives](#) - A healthy, flavorful one-pan dinner, [description](#). Recipe and nutritional rundown, [here](#).
- [5 Healthiest Nuts](#) - ranked by nutritionists and dietitians, [here](#). Summary: [walnuts](#), [pistachios](#), [almonds](#), Brazil nuts, cashews.

- Lemons - When life deals you lemons, *do* [store them properly](#). Zesting from the rinds will brighten-up a salad.
- Spinach - According to a registered dietitian, it helps lower blood pressure and supports heart health. It also provides a range of nutrients: nitrates, potassium, calcium, magnesium, fiber, and omega-3 fatty acids. [Details](#). Raw best.
- Asparagus - A registered dietitian says it [lowers blood pressure](#), and provides potassium, antioxidants, folate, and other bioactive compounds that reduce oxidative stress and improve blood vessel function. Boiled/broiled *briefly*. Keep fresh like cut flowers ... trim the stem ends a bit, stand-up in a glass with sugared water, and store in the fridge.
- Green Goddess Grain Bowl - Very healthy recipe, [here](#). Tune-up: Replace kosher salt with low-Sodium iodized salt. For a bonanza of antioxidants, also consider adding cut-up leaves/stems snipped *directly* from a *living* watercress plant (available from the right grocery store, kept in water in the fridge). Olive or avocado oil is OK.
- Foods To Eat (And Avoid) To Reduce Risk of Osteoporosis - according to a registered dietitian, [here](#).
- Coffee -
 - The 4 Types Of Coffee Beans - that make up most of the coffee supply worldwide, explained [here](#). **Arabica** (*Coffea arabica*) makes up 60-70% of coffee worldwide ... sweet, aromatic, lower acidity. Most of the rest is **Robusta** (*Coffea canephora*): stronger, more bitter, twice the caffeine, often used to make decaf coffee. And then there's **Liberica** (*Coffea liberica*) and **Excelsa** (*Coffea liberica* var. *dewevrei*).
 - Arabica Or Robusta - and dark or light roasting? The differences discussed in this [video](#). [skip ad]
 - Cold Brew - The longer brewing time used in most cold brewing protocols (>24 hours) gives a more thorough extraction of coffee bean nutrients. Lighter roasts are also better for preserving nutritional value. The lower acidity of light roast cold brew lowers the risk of conditions such as [acid reflux](#) and [GERD](#) (gastroesophageal reflux disease). [NIH](#) publication. [CC]
- Three Ways NOT To Use Aluminum Foil - [here](#). And the [right temperature and prep for baked potatoes](#) (no foil).
- Fresh Or Jarred Garlic - Does it matter? Yes, [details](#). Alternative: some stores offer frozen minced garlic.

Environmental Science News -

- Bald Eagle Nest - Live cam view of the nest in Big Bear Valley California, [here](#). Jackie and Shadow come and go. [choose view, turn on sound, EST minus 3 hours]. [Background](#). [turn on sound]
- Strangler Fig Trees (*Ficus Tuerckheimii*) Used As Multi-Species Latrines In High Altitude Costa Rican Cloud Forests - Scientists discovered that 17 different species of mammals were returning to their favorite tree several times a day, [details](#). Publication [here](#).

- How To Deal With Carpenter Bees (Xylocopa spp.) - [here](#) You don't need to kill these [pollinators](#).
- What Does The 30 Million Acres Of US Corn Get Used For? - Most of it is converted to ethanol, to be blended into gasoline and burned in cars. According to a paper recently [published](#) by researchers at Cornell University, about 3.2% of that land lies within 19 miles of an electrical transmission line. They calculate that if this land were used for producing solar power, it would match the energy from the entire US corn-ethanol output. [Details](#). No fertilizer, no ethanol refineries, no tractors, no pollution from run-off, no emissions, no federal subsidy \$\$\$ for corn production.
- Rare Earth Mining/Refining In Norway - The [Fen deposit](#) (map), under development by [Rare Earths Norway](#) (Molde Norway) and estimated to hold [15.9 million tons of rare earth oxides](#), will be taken over by the Norwegian government to speed-up the project. The company [estimates](#) that 19% of the oxides are Neodymium and Praseodymium (NdPr), key elements needed for the permanent magnets used in EVs, wind turbines, electronics and defence applications. Production start is targeted for late 2031. Go!
- Next-Gen Nuclear Reactor Breaks Ground In Kemmerer Wyoming - [TerraPower](#) (Bellevue WA) began Kemmerer Unit #1 site preparation in 2024, and has now announced the start of full-scale construction for its first '[Natrium](#)' fast neutron reactor system, a 345 MW sodium-cooled reactor paired with molten-salt-based energy storage. Power output can be increased to 500 MW during peak demand periods. The [timeline](#) for full operations has not yet been announced. Thanks to the US Department of Energy's Advanced Reactor Demonstration Program ([ARDP](#)) for the start-up funding. See 5 next-gen reactor types with development support from ARDP, [here](#).
- The Garden Of Eden Is In Cornwall (UK) - The [Eden Project](#) is a cluster of domes housing plants from all over the world, kept at the right temperature with energy extracted from a deep geothermal borehole about the diameter of a pizza ... and 3 miles deep! [Details](#). The deeper you go, the higher the temperature, the more energy can be extracted ... but eventually physical drill bits are useless, they melt. [Quaise Energy](#) (Cambridge MA) plans to use klystron-generated millimeter (energy) waves to drill down as far as 12 miles to ultra-hot rock(>1000° F) for much more massive energy extraction. [Project Obsidian](#), central Oregon, 250 MW from a single location, 2030.
- Water Trouble In Corpus Christi Texas - There have been 5 years of severe regional drought, both the city's principal reservoirs ([Lake Corpus Christi](#) and [Choke Canyon](#)) were down to 9% capacity this Spring, the proposed desalination plant has been canceled, and surrounding jurisdictions are resisting having their ground water tapped. The city manager had mandated a 25% reduction in water consumption, now put off until early 2027 because of [recent rains](#). He has also planned \$1 billion in emergency pipeline and groundwater projects, to establish alternative water sources in case the reservoirs hit *day zero* ... 60% of the city's water is used by its industrial sector, centered on oil refineries and chemical plants. [Details](#).
[Mike/Jacqui K., CC]

- Two New Rail Tunnels Under The Hudson River - The [Gateway Tunnel Project](#) will connect New Jersey and New York with modern twin rail tunnels ... a \$1.29 billion *contract has been awarded*, and construction is expected to start this year. When the new tunnels are in service, the old tunnel will be repaired and restored to provide additional connectivity in this very busy rail corridor. [Photos](#). [Phil/Pauline J.]
- Hydropower Imported From Quebec - Now!! Finally!!
 - New York City - The 330-mile, \$6 billion [Champlain Hudson Power Express](#) (CHPE) has begun delivering power to New York City. This 1,200 MW underground underwater line has the capacity to supply 20% of New York City's power demand. Map and details, [here](#). First power June, 2026. Stay tuned.
 - New England - The 145-mile, \$1.65 billion [New England Clean Energy Connect](#) (NECEC) line began delivering power in January to the Lewiston, Maine interconnect, and then on to Massachusetts via New Hampshire. The new line has a 1,200 MW capacity, enough to satisfy about 20% of Massachusetts' electrical power needs. Map and details, [here](#). [Barbara R., Julian G.]
- 330 Foot Tsunami Wave Traveling At 160 MPH - ran across the fjord and struck a cliff face, running up to a height of 1,600 feet ... the second tallest tsunami ever recorded on Earth. Had there been the usual gathering of cruise ships in Alaska's Tracy Arm fjord last August, the result might very well have been catastrophic ... In Summer the fjord typically sees 20 boats daily, including 6 large cruise ships. The wave was created by a massive rock slide released by the retreat of Alaska's South Sawyer Glacier. Photo and details, [here](#). [John McK.]

Other Science News -

- Autonomous US Warships - The idea is making headway now that the US Navy is onboard. Details and a photo, [here](#). [Saronic Technologies](#) (Austin TX) has announced receiving a [\\$392 million production contract](#) from the US Navy for its [Corsair](#) autonomous maritime vessels ... 24' long surface vessels, 1,000 mile range, 1,000 pound payload, 35 knot speed, [\\$300 million shipyard expansion](#) in [Franklin Parish LA](#) targeted for completion in 4Q26.
- Ukrainian Demining Robot - The [TLK-150](#) from Ukrainian defense company [Toloka](#) is 8 feet long, weighs 50 pounds, has a single-charge range of 60 miles, a payload of 110 pounds, glides along just *beneath* the surface mapping the mine fields below, is linked by GPS, and has performed hundreds of demining missions in the Black Sea. Before you can remove mines, you must *find* them. Now where could the US use that tech? [Details](#). Oh by the way ... they're cheap! Good video [here](#).
- 12 Year Old Ukrainian Boy Disables Drone Heading For His Home - [story](#). He knew how it worked, and was ready.
- Japanese And Ukrainian Drone Makers Partner - [Terra Drone Corporation](#) (Tokyo Japan) has [announced deployment in Ukraine](#) of its 'Terra A2', a fixed-wing

interceptor drone jointly produced with Ukrainian defense company [WinnyLab](#) (Kiev). Top speed of 200 mph, range 47 miles, flight endurance >40 minutes, \$2,500 unit cost. Terra Drone has already deployed the rocket powered [Terra A1](#), See the A1 interceptor drone find a Shahed, from the A1's point of view [\[video\]](#). [Background](#).

- [Quantum-Accelerated 'System-of-Systems' Autonomous Defense Platform - Quantum Cyber](#) (West Palm Beach FL) focuses on drone warfare, counter-UAS, autonomous mine countermeasures, quantum swarm coordination, and advanced command-and-control applications. The company recently [announced](#) the acquisition of a \$3.2 million, 43,000 SF building in Bridgeport CT to support mass-scale autonomous drone production.
- [Nancy Grace Roman Space Telescope](#) - is complete, **8 months early and under budget**, at the [NASA Goddard Space Flight Center](#) (Greenbelt Maryland). Launch is scheduled for this September on a SpaceX Heavy rocket. It is designed as both a survey telescope and a [coronagraph](#), and will operate at infrared wavelengths as a tunable spectrocope. [Details](#), and a photo. Thanks NASA. [Wade S.]

[Nice Thing](#) - [full screen]

- [Autumn Leaves](#) - originally titled Les Feuilles Mortes, a jazz standard and popular song composed by Joseph Kosma in 1945, original lyrics by French poet Jacques Prévert, interpreted for cello by Gautier Capuçon, [here](#).
- [Autumn Leaves](#) - interpreted for violin, cello and vocalist (in French), [here](#).
- [Autumn Leaves](#) - as sung by Yves Montand with jazz ensemble, [here](#).

Useful Health And Nutrition Websites -

- [Health Biomarker Websites](#) -
 - [NIH BMI Calculator](#) - [NIH](#) National Heart, Lung and Blood Institute [calculator](#). Find your Body Mass Index (BMI).
 - [Basal Metabolic Rate \(BMR\)](#) - Your BMR is how many calories you burn just sitting in your chair, [calculator](#).
 - [Body Roundness Index \(BRI\)](#) - Estimate your *visceral* fat, [details](#) and [calculator](#). Harvard background, [here](#).
 - [Are Your Stools Healthy?](#) - Check the Bristol Stool Chart [here](#). You should be a Type 3 or 4. Not complicated. [Details](#).
- [Nutrition Websites](#) -
 - [Is Your Favorite Food Ultra-Processed?](#) - and good substitutes. Northeastern University [TrueFood Dashboard](#).
 - [Most Nutritious Vegetables and Fruits Rank-Ordered by CDC](#) - List [here](#). Chinese cabbage = bok choy.
 - [Misleading Words For Sugar](#) - High-fructose corn syrup, sucrose, barley malt, dextrose, maltose and rice syrup are all [forms of sugar](#). Erythritol and Xylitol

have 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.