

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be this Wednesday, October 8 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:

- FDA Seizes Illegal Vapes
- Medical Associations And States Make Their Own Covid Vaccination Recommendations
- Measles Infections In Infancy
- HER2-Positive Metastatic Breast Cancer
- Norovirus
- Treatment To Recover From Stroke And Traumatic Brain Injury
- Secret To A Healthy Gut
- New Tech May Eliminate Need To Sort Recycled Plastics
- Lots of info on solar and wind projects
- New Moon Discovered – do you know how many are around Uranus?

Science Report

I'm 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](#).

- The End Is Near ... In Mississippi - Beginning on October 1, [only FDA-approved vapes may be sold](#) in the state. The Mississippi Commissioner of Revenue will publish a [list](#) - "Violations can lead to fines, product seizures, and potential loss of a retailer's tobacco sales license." Vapes can contain a variety of toxic and addictive substances, one of which is formaldehyde, a known carcinogen. They can also have [cognitive impacts for those under 25](#).
- FDA Seizes Illegal Vapes - The US Food and Drug Administration (FDA), working with US Customs and Border Protection (CBP), has [announced](#) the seizure of 4.7 million units of unauthorized e-cigarette products (vapes) valued at \$86.5 million.
- CDC Advice On Screening For Prostate Cancer - [here](#).
- Medical Associations And States Make Their Own Covid Vaccination Recommendations -
 - American Association Of Family Physicians (AAFP) - [here](#)
 - American Academy Of Pediatrics (AAP) - [here](#) and [here](#).
 - American College of Obstetricians and Gynecologists (ACOG) - [here](#).
 - West Coast Health Alliance - California, Oregon and Washington State have formed an alliance to establish a unified vaccine policy, informed by national medical associations, [here](#). Massachusetts and New York are also forming their own policy. [Virginia](#) likewise.

- Measles Infections In Infancy - when the subject is too young to be vaccinated, can result in horrifying complications later on, [here](#). Community-wide vaccination (>95%) is needed to protect children at this most vulnerable time. We were once there, but no longer.
- 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 -

- Reducing Risk Of Coronary Artery Disease - An international team of researchers has recently (8/25) published a study showing that 'clopidogrel' (prescription only) is better than the widely used aspirin for this indication, with fewer side effects. [Background](#) and [publication](#). See Mayo Clinic advice [here](#). One brand of clopidogrel is 'Plavix'.
- HER2-Positive Metastatic Breast Cancer - The [BioNTech](#) (Mainz Germany) medication for this indication, 'trastuzumab pamirtecán' (BNT323/DB-1303) developed with [DualityBio](#) (Shanghai China), is a next-generation cancer smart bomb - an antibody drug conjugate (ADC) that sends toxic chemicals directly to proteins on the surface of tumor cells. The [results of the Phase 3 human trial conducted in China look promising](#), and the companies are preparing a request for approval in China. The ADC approach may be applicable to other cancers.
- Norovirus - [Vaxart](#) (South San Francisco CA) has reported positive results for the Phase 1 human trial of their oral vaccine for this indication, and is designing a Phase 2 trial. Norovirus is a leading cause of acute gastroenteritis (AGE) worldwide - 685 million annual infections, 20 million in the US. [Details](#). [John McK.]
- Treatment To Recover From Stroke And Traumatic Brain Injury - NIH researchers have recently [published](#) a report indicating that an existing medication ([CCR5 antagonist](#)) already [FDA approved for HIV treatment](#) shows promising results for this otherwise difficult to treat set of indications. Human trial in Canada, [here](#). We are closer yet to understanding how the brain works at the molecular level.

Other Health Science News -

- Heart Rate Sensor Now Included In Wireless Earpods - The recently released Apple AirPods Pro 3 uses infrared pulses (photoplethysmography) to measure heart rate. They also offer improved noise cancellation, audiometry curve correction for frequency dependent hearing loss, real time translation for select languages .. and more. Details and an up-beat video, [here](#).
- Hypertension (High Blood Pressure) Notifications - are coming to the current editions, and certain older editions, of the Apple Watch in 150 countries ... beginning with the release of watchOS 26 this month. [Details](#). What [FDA clearance](#) for this software means,
- Secret To A Healthy Gut - [Potatoes](#), skin on, baked/broiled or boiled, and then chilled overnight before being eaten to convert much of their complex carbohydrate content to [resistant starches](#) (can be reheated if desired hot). [Publication](#).

- What Are Your Stools Saying - about your gut health? Their size, shape and surface consistency have a story to tell, explained [here](#), and with diagrams presented in the **Bristol Stool Chart** - click on the website link at the end of this section below. Once you know what to look for, it just takes a few seconds to find out which one of the 7 classes you're in. You want to be a #3 (firm, but good enough), a #4 (gold standard) or a #5 (loose, but OK). Other results, if persistent, should be reported to your doctor.
- Good Hair Health - begins with healthy nutrition that includes vitamin D, iron, and protein. In a recently published study, researchers concluded that sugary drinks and alcohol increase the risk of [hair loss](#). [Publication](#)
- Polystyrene Foam (Styrofoam) Food Service Containers - will be [banned in Illinois](#) from 2030, because hot/acetic/fatty foods can leach [harmful chemicals](#) from the material. Other states? EPA?
- New Tech May Eliminate Need To Sort Recycled Plastics - A new [Nickel based catalyst can even recycle PVC](#) plastic, the tough one (condiment bottles, milk jugs, plastic wrap, trash bags, and juice cartons). Researchers at Northwestern University have just published their work on this promising innovation, [here](#). The spent catalyst can be recycled. Bring it on!
- 7 Medications Interfered With By Milk - [here](#).
- Better Than Brita For Purifying Drinking Water - Removes PFAS, and other contaminants, [here](#).
- 5 Things A 78 Year Old Does Daily To Stay Mentally Sharp - [here](#).
- Foods That Raise Blood Pressure - You know about the Sodium in salt, but the stealth ingredient is added sugar ... both standard cane sugar and high-fructose corn syrup. The [mechanism for that is now known](#) - sugar raises the levels of uric acid in the body, which leads to a decrease in production of the nitric oxide that normally helps the blood vessels in the kidneys relax, etc. [Publication](#).
- Hypertension (High Blood Pressure) - [More than half of Americans >40 have high blood pressure](#), with **many unaware**. That's why some call it the silent killer. See the American Heart Association's recommendations for detection and early treatment, [here](#), and ask your doctor about your BP numbers during each annual physical exam. There *are* things under your control to do.
- High Cholesterol - above [240mg/dL](#) (milligrams per deciliter), can be reduced in many cases without statins. [1 in 10 Americans \(34 million people\) have high cholesterol](#), and are at increased risk of heart attacks as a result. There are no obvious symptoms You already know the two types of things to do: well planned exercise, and wisely chosen nutritional practices. [Here](#) are some ideas.
- 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 -

- The Power In Pulses - Since beans, peas and lentils are harvested from pods, they are members of the pulse family of fiber-rich vegetables. Vitamins, minerals and antioxidants .. Oh my! [Details](#)
- Farro Or Brown Rice - Both are nutrient rich whole grains, so you can't go wrong. Choose [farro](#) if your nutritional goals prioritizes protein and fiber. Favor brown rice for certain minerals, and for a gluten-free choice. [Details](#), and a nutritional chart for both.
- The Muscadine - is the [native American grape](#) (includes the scuppernong variety), with excellent antioxidants and good fiber. See a nutritional run-down, and health benefits, [here](#). In season

(September through November) they are available fresh in the DMV at groceries with excellent produce departments, and also by direct-from-farm order, [here](#). Do eat the nutritious, chewy skins. [Sam J., CC]

- [Corn Is A Whole Grain](#) - and has great fiber. It also has several key nutrients, and good antioxidants. [Details](#). Tune-up for fresh boiled corn-on-the-cob: cook just 2 minutes in rapidly boiling water ... **no butter** ... for a dip, mix avocado oil or olive oil with salt/pepper and your choice of powdered herbs, and eat hot with corn holders. Frozen corn is also nutritious. Popcorn prepared in avocado oil is also good - available ready to eat in bags at the right grocery store.
- [7 Healthy Types Of Bread](#) - A registered dietitian lists them, and gives a nutritional run-down on each one, [here](#).
- [Is It Safe To Put Hot Food In Fridge?](#) - Yes. Video with some tips, [here](#). Stay on for a good zucchini recipe. [turn on closed captions]
- [Alternatives To Highly Processed Deli Meats](#) - [here](#).
- [Lifetime For Miso Paste](#) - Unopened in the fridge, could last a year (check the use-by date). Opened, in the coldest part of the fridge, with plastic wrap pressed onto the surface to keep out air, several months. [Details](#)
- [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](#) - Solar, wind and biomass accounted for [91% of new US installed power generating capacity in 1H25](#).

- [Shine Baby Shine](#) - Solar Projects
 - [New \\$900 Million Solar Farm In Texas](#) - Texas continues to play a leading role in renewable energy development. The Canadian renewable energy company [Enbridge](#) (Calgary, Alberta Canada) has begun construction on the Clear Fork solar farm near San Antonio TX, with completion projected for mid-2027. Specs: 600 MW, [100% power purchase agreement from Meta](#).
 - [Sheep And Solar In Ohio](#) - The [Frasier Solar Project](#) has been approved for development in Knox County Ohio by sustainable energy developer [Open Roads Renewables](#) (Austin TX) - 120 MW, 840 acres, single axis solar tracking, [agrivoltaic](#) project including [native plants](#) and grazing sheep under the elevated panels. [Details](#). [Harvey B.]
 - [Raising Sheep And Making Electricity In Kentucky](#) - Photo of sheep keeping cool in the shade under the solar panels, and looking pleased, [here](#).
 - [Solar Surge In Africa](#) - 15 GW of additional solar panel capacity was imported from China from June 2024 to June 2025, and its continent-wide this time ... not just South Africa. Sun they've got! [Details](#)

- First Operational Floating Solar Tracker In US - [Noria Energy](#) (Sausalito CA) has constructed the 50 kW Aurea pilot project on the Fairmount reservoir in Golden Colorado using the company's [AquaPhi](#) technology (rotates an entire floating island to increase output by as much as 20%). Cost-effective construction, water cooling increases panel efficiency, reduced evaporation from reservoirs, on-line now. [Details](#).
- Progress On US-Based Supply Chain For Solar Panels - [T1 Energy](#) (Austin TX) will begin receiving the key material polysilicon from a Corning (New York) plant in Michigan starting 2H26. Currently the only US-based solar panel manufacturer with an *entirely US-based supply chain** is [First Solar](#) (Phoenix AZ) - doesn't use Silicon. [Details](#), including a list of the world's 8 largest solar panel manufacturers. *important for US tax credits.
- Solar Curtains Plus Storage Powers 380 Foot Zero-Carbon Office Tower - Not roof-top solar. The building in Qingdao City China uses transparent photovoltaic glass curtain walls across its east, south, and west facades to produce 25% of the required 6,000 kWh of energy needed. And then there's the world's first fully automated high-speed vertical parking garage - automatically parks cars in 35 seconds. The parking system incorporates vehicle-to-grid (V2G) technology, allowing the 300 parked cars to cover a further 50% of the building's energy demand. A battery storage system uses 14 retired EV batteries to store excess energy generated during the day for later use. [Details](#), and a photo. In 1H25, renewable energy accounted for 91% of new installed power in China, and [10% of GDP](#).
- From Connecticut Landfill To Solar Farm - [Greenskies Clean Energy](#) (North Haven CT) will be placing [1,900 solar panels on a capped landfill in New Haven](#) CT in the next 6 months: power for 200 homes. This is the company's 12th solar farm in CT.
- Massive New Solar In Bulgaria - The [Tenovo Project](#), a hybrid (solar+storage) project located on an abandoned military airport in the Yambol Province of Southeastern Bulgaria, will have a 238 MW solar power capacity, 760 MWh of battery storage, and a high capacity grid connection. No government funding/subsidies, no advance power provider agreements - power will be sold into the grid on a commercial basis. The first phase will be operational in early 2026. The nearby [Maritsa East Complex](#), one of the largest coal fired power plants and open pit coal mines in Europe, is in the process of being *decarbonized*. [Details](#).
- School Solar In Michigan - [The Lansing School District has 11 solar projects](#) in progress, bringing in \$9 million in clean energy incentives. The new solar facilities should save as much as \$500,000 in energy costs during the first year of full operation.
- Rice And Solar Power In Japan - University of Tokyo [researchers and rice farmers in Miyada \(Nagano Prefecture\)](#) teamed up to install solar panels 10 feet over rice paddies, and observed the yield for both rice and power under various circumstances. Result: 44,000 kWh of electrical power annually, with 85% of the rice yield compared to an adjoining field. Win win! [Publication](#)
- Solar Canals - [Project Nexus](#) [excellent video, turn on closed captions] is a \$20 million, 1.6 MW demonstration project that just went on-line this August. Benefits: provides local power in remote areas, reduces water loss due to evaporation, reduces pump clogging algae growth, solar panel efficiency increases over cooling water, uses no agricultural land, provides shade for desert wildlife. See the two form-factors being tested, and other details, [here](#). There are **8,000 miles of federally owned canals and aqueducts** with a 25GW potential, power for 20 million homes, potential water saving of tens of billions of gallons. Why not do it?! First California, then Arizona and Nevada

- New Global Solar Installations Up 64% - in the first half of 2025, charts [here](#). The US is not the [world](#).
- Blow Baby Blow - Wind Projects
 - Largest On-Shore Wind Project In Europe - [Vestas](#) (Aarhus Denmark) is teaming up with First Look Solutions, a subsidiary of [Rezov Energy](#) (Bucharest Romania) to build the [Vifor Wind Farm](#) - onshore wind, 450 MW, Buzău Romania, 400 kV grid access available, near the windy Carpathian Mountains, under construction, commissioning 2H27. [Details](#)
 - Rhode Island/Connecticut Offshore Wind - Power for 350,000 homes. Revolution Wind, a joint venture between [Ørsted](#) (Fredericia Denmark) and [Skyborn Renewables](#) (Hamburg Germany), is about 80% complete, with all the necessary federal and state permits after a 9-year review process. The US Department of the Interior's Bureau of Ocean Energy Management (BOEM) recently [issued a stop-work order](#) without fully explaining its reasons, and the [companies have filed a federal lawsuit](#). Time is money. Stay tuned. [Harvey B, Julian G.]
 - Construction Start On Massive Onshore Wind Farm In Chile - [ENGIE Chile](#) has begun construction of the [Pampa Fidelia](#) wind farm in the Taltal Wind Reserve, northern Chile - 51 turbines, 306 MW, power for 300,000 homes, completion by 1H27. The company has more projects. Go! [Details](#). [Sarah F.]
 - Vestas Wind Systems (Aarhus Denmark) - will supply [Energiekontor AG](#) (Bremen Germany) with 13 of its V162-7.2MW turbines for the 94 MW [Haberloh & Heidkrug project](#) in the Verden district of Lower Saxony Germany. Operational 2027.
 - Wind Farm Elster (Wittenberg, Saxony-Anhalt, Germany) - was a 50 wind turbine site. Now the German company VSB Group, a [new acquisition](#) of [TotalEnergies](#) (Paris France), is upgrading the wind farm's energy output with 18 Siemens Gamesa SG 6.6-155 turbines producing 600% of the original power - 235 gigawatt-hours per year, power for tens of thousands of homes! [Sonja B.]
- Scientists Optimize Tomato Growing - by filtering out the part of the sun's spectrum that damages them (to use for producing solar energy), leaving only the part of the spectrum useful for the tomatoes. This should allow [greenhouse tomato cultivation to be optimized](#), and produce power at the same time. [Details](#)
- Environmental Clean-up And Adaptive Reuse In Alabama (Map) -
 - 'Mobile American Bumper Plating' - The [electroplating plant](#) operated for about 40 years near Interstate 10 in South Mobile Alabama, closed permanently in 2004, and left behind a substantial amount of hazardous chemical waste (cyanide, nickel solution, sodium hydroxide, chromic acid) . After the EPA clean-up, which is still in progress, the 7 acre site will be offered for new uses.
 - The World's Largest Tire Producer - operated a plant in [Gadsden Alabama](#) until its [closure in 2020](#), after 90 years of operation. The [66 acre site](#) near Interstate 59 has now been leased by renewable energy logistics company [Takkion](#) (Sioux Falls South Dakota), for use as a storage and handling hub for renewable energy materials such as solar panels. Born again! See Takkion's ISO 9001 certification by the US National Institute for Standards and Technology (NIST), [here](#).
- Geothermal Upgrade For The Azores - [Exergy International](#) (Arlington VA) and EDA Renováveis (Ponta Delgada Portugal) have been engaged to renovate the existing [geothermal](#) facility in Ribeira Grande on the island of São Miguel in the Portuguese Azores. The new \$29 million facility will produce 5 MW from underground strata at 300° F. [Details](#).

Other Science News -

- First Vulcan Launch - The United Launch Alliance (partnership of Boeing and Lockheed Martin) launched an actual payload with its new Vulcan rocket for the first time in August, successfully inserting several satellites into geosynchronous orbit (GEO). The first stage used four solid fuel strap-on boosters, and two methane-fueled BE-4 engines (provided by Blue Origin, Jeff Bezos), to reach low Earth orbit (LEO). After separation, the Centaur upper stage, powered by two hydrogen-fueled RL10C engines (provided by Aerojet Rocketdyne), reached GEO 22,300 miles up - finally, no more Russian rocket motors!! [Details](#) [Wade S.]
- New Moon Discovered - by the NASA James Webb Space Telescope's high-resolution Near-Infrared Camera. Five moons of [Uranus](#) were known. Then, in 1986, the Voyager II fly-by discovered 11 more. Several have been discovered since, and the new moon, [temporarily named S/2025 U1](#), brings the total to 29!
- Magnets Without Rare Earths - [Niron Magnetics](#) (Minneapolis MN) is using a new technology for permanent magnet manufacture incorporating Iron Nitride - no imports, no new mines, no exotic materials refineries. Stay tuned as they progress toward commercialization. [Background](#). More important than it sounds.
- Ukrainian Mini-Tank Drones - are increasingly being used for logistics: ammunition, food and water, evacuation of wounded. [Details](#). Meet Ukrainian drone pilot Vasyi, [here](#).

Nice Thing - [full screen]

Band Of Brothers - Requiem - [here](#).