

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be Wednesday, April 8, 2026 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:

- Arsenic Found In Certain Candies
- Metastatic Non-Small Cell Lung Cancer
- New reasons to Floss
- Chocolate May Slow Aging, And Have Other Benefits
- Virginia Cutting Red Tape For Solar Power
- \$1.1 Billion Solar Panel Manufacturing Facility Opens In Louisiana
- AI Analysis Of Bird Interactions With Solar Panels
- Hypersonic Scramjet Aircraft Launched From Virginia -

Science Report

Self-Protective Measures -

You should get vaccination advice from your doctor or your pharmacist ... not from this Report or the internet. Everyone should consider maintaining current vaccinations for the three respiratory viruses: Covid, flu and RSV (for RSV, adults [over 60](#) and children <8 months), unless your doctor/pediatrician advises against. Adults over 50 should have had the [Shingrix vaccine for shingles](#) (two doses 2 to 6 months apart, good indefinitely), and also the [Pneumococcal Vaccine](#). Many states are making access to these vaccines less complex - [map](#).

Vaccine and Therapeutic News -

- [Arsenic Found In Certain Candies](#) - A study recently released by [Healthy Florida First](#) lists the 28 candies in which researchers discovered arsenic, presents a table listing them by company/brand, and gives the number of pieces that children or adults can eat without exceeding safe limits for the toxic heavy metal, [here](#).
- [Metastatic Non-Small Cell Lung Cancer](#) - [Krystal Biotech](#) (Pittsburgh PA) medication [KB707](#) has been granted [Regenerative Medicine Advanced Therapy](#) status by FDA to more rapidly advance the company's treatment for this unmet need - based on promising preliminary results from the company's ongoing Phase 1/2 [clinical trial](#).
- [Fatty Liver Disease](#) - also known as metabolic dysfunction-associated steatohepatitis (MASH), can cause permanent scarring of the liver ... thought until recently to be irreversible. Researchers at Virginia Commonwealth University (VCU) are [testing two drugs that may change that](#). Other treatments are also being tested, and [one has been granted Accelerated Approval Status by FDA](#), pending completion of a Phase 3 study by [Madrigal Pharmaceuticals](#) (Conshohocken PA).
- [AI-Assisted Lung Cancer Detection Software](#) - FDA has [granted](#) 510(k) clearance for the [Median Technology](#) (Sophia Antipolis, France) software tool 'Eyonis' for this indication - demonstrated

93.3% sensitivity, 92.4% specificity, and 99.9% Negative Predictive Value (NPV) in screening for lung cancer using low-dose CT X-ray scans. [Details](#). Offered/facilitated in the US through [Tempus](#) (Chicago IL).

- [Accuracy Of Thyroid Stimulating Hormone \(TSH\) Blood Test Accuracy Questioned](#) - TSH testing (biomarker for thyroid dysfunction) is a fundamental part of everyone's annual physical exam, and [CDC provides standardized test samples](#) so that the several manufacturers making the highly automated test machines used to measure TSH in patient samples can cross-calibrate their instruments. But FDA does not *require* this cross-calibration step, and a published study has shown a clinically significant divergence in results for tests done using different testing machines - [Figure 1](#). FDA action?
- [FDA Vaccine Chief Leaving \(For Second Time\)](#) - The Director of FDA's Center for Biologics Evaluation and Research (CBER), also the Agency's [Chief Medical and Scientific Officer](#), will be leaving in April, *again*. [Story](#).

Other Health Science News -

- [Evolution In Microgravity](#) - Researchers at the University of Wisconsin sent samples of E. coli infected with the T7 virus (a [bacteriophage](#)) to the International Space Station ([ISS](#)) to investigate their interaction in microgravity. Both the virus and the bacterium evolved in the course of their competition to infect and resist infection respectively. When the *space-evolved* virus was tested against *unevolved* E. coli back on Earth ([publication](#)), it was more successful than its unevolved ancestor. Now the researchers in Wisconsin have a clue for designing treatments that bypass the defenses of antibiotic-resistant bacteria. Some strains of E. coli cause urinary tract infections that resist antibiotics.
- [When Statins Don't Work Well Enough](#) - to lower LDL cholesterol to meet medical guidelines for patients at high risk of heart attack, there are injectables that work by a different method to do the job. They are rarely used, however ... cost, patient resistance to injection. Now [Merck](#) (Rahway NJ) is sponsoring a [clinical trial](#) of the daily oral medication *enlicotide* for this indication. [Preliminary results](#) from researchers at [UT Southwestern Medical Center](#) show [outcomes](#) similar to the injected alternative. [Publication](#). FDA has granted expedited review. Stay tuned.
- [Side Effects Of Statins](#) - Researchers at Oxford University (UK) have recently [published](#) a study concluding that, besides the known effects on muscle outcomes and diabetes, only 4 of the 70 or so side-effects usually listed are supported by evidence ... liver test changes, minor liver abnormalities, urine changes, tissue swelling. [Details](#).
- [Kidney Stones](#) - have been considered non-infectious, but University of California Los Angeles (UCLA) researchers, using electron microscopy and fluorescence microscopy, have [recently discovered](#) that calcium oxalate kidney stones contain sheets of bacteria in their internal structure that may be contributing to their formation. This presents the possibility of dealing with *chronic* kidney stone formation by dealing with the *original sources* of infection. Great!
- [Flossing](#) - is important for oral health, but is now known to also be important more generally for both brain and heart health ... by reducing sources of inflammation. [Details](#).
- [Breathing Traffic Fumes For Science](#) - A British journalist spent 10 minutes at a time in central London [breathing in traffic fumes](#), and then having blood samples tested by researchers at Queen Mary University of London. They saw particles of pollution (engine exhaust, tire wear, brake dust) attached to red blood cells in the samples after even this brief exposure. Air pollution has been linked to a number of health issues, including: heart attacks/ strokes, lung

cancer, developmental impacts on infants, and acceleration of dementia. Pollution matters, [details](#).

- [Colorectal Cancer Increase In Women <50](#) - Researchers at Harvard have recently [published](#) a study of 29,000 female nurses under 50 showing that those who ate the highest amounts of ultra-processed food had a 45% higher risk of developing adenomas, a type of precancerous colorectal polyp. [Details](#).
- [Bedroom Temperature And Cardiac Risk For Adults >65](#) - A study [published](#) by researchers at the University of Queensland (Australia) concluded that sleeping temperatures above a limit of 75°F increased cardiac risk. [Details](#).

Practical Nutrition -

- [Are Groceries Expensive?](#) - See the states ranked by average grocery bill as a percentage of median household income. Map, and a look-up table by state, [here](#). Most expensive - Mississippi. Least expensive - Massachusetts.
- [Healthy Leafy Greens You Probably Are *Not* Eating](#) - and why they are healthy choices, [here](#).
- [Chocolate May Slow Aging, And Have Other Benefits](#) - Researchers at King's College London (UK) recently [published](#) a study concluding that theobromine, a natural compound found in cocoa, may help slow biological aging. Details and a good video, [here](#). An earlier study had shown that chocolate can help lower blood pressure, [publication](#). A third study had found that chocolate lowered the risk of Type 2 diabetes, [details](#) and a [publication](#). Tune-up: **dark chocolate only** (>70% cacao), eat in moderation because of the sugar and saturated fat. Enjoy!
- [There May Soon Be Less Chocolate In Chocolate](#) - Do read the back of the package on your chocolate treat, [details](#).
- [Canned Beans](#) - To rinse ... or not to rinse ... *that* is the question. It's all about sodium from the salty liquid they are probably packed in (read the nutritional label on the back). If you're watching your sodium, then drain and wash, flavoring with low-sodium-salt to taste. Or drain most of the liquid, and add back a bit for flavor - keeping in mind that the dish has already been salted. [Beans are rich in fiber](#), and have potassium. Details from a dietitian, [here](#).

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]
- [Virginia Cutting Red Tape For Solar Power](#) - Legislation is in the works that would preclude arbitrary local solar project vetoes by creating a set of *statewide* development standards. Timely. [Details](#). The 2020 Virginia Clean Economy Act targeted building out 16.1 GW of new solar by 2035. [Sarah F.]
- [US Renewable Energy Generation Booming](#) - 99% of net new US electrical energy generating capacity projected to come on line in 2026 is expected to be wind or solar plus battery storage, according to [data](#) from the US Energy Administration (EIA). Solar is trending to take the lead, see graph [here](#). Where we are [now](#) - solar overtook hydro.
- [\\$1.1 Billion Solar Panel Manufacturing Facility Opens In Louisiana](#) - The new AI-assisted, 2.4 million SF [First Solar](#) (Tempe AZ) plant in [Iberia Parish](#) has an annual production capacity of 3.5 GW, and a fully US-based supply chain - the company's thin-film cadmium telluride (CdTe) modules do not use Silicon. The new plant brings the company's 2026 US annual panel manufacturing capacity to 14 GW, planned to rise to 17.7 GW in 2027 when its [next new facility](#) in Gaffney, South Carolina adds 3.7 GW. [Details](#). ☀️

- AI Analysis Of Bird Interactions With Solar Panels - Argonne National Laboratory, with \$1.3 million in funding from the US Department of Energy's Solar Energy Technologies Office, has developed an [AI-client guided system for tracking the way birds engage with solar panels](#) [video and map]. The system automatically classifies their behavior using a machine learning algorithm ... 95% accuracy in identifying bird behaviors based on 17,000 videos. **Not a single collision was recorded!** The birds flew through the arrays of panels, perched on them, foraged/nested/roosted under them. Conclusion: solar panels can be valuable habitats for birds. Argonne has identified 7 additional geographic areas for further study. Very clever! [Sarah F.]
- Geothermal Energy In Colorado - See a [report](#) from [Xcel Energy](#) (Minneapolis MN) evaluating the *dramatic* improvement in energy efficiency achieved by its low temperature geothermal demonstration project on the campus of [Colorado Mesa University](#) (CMU), Grand Junction CO. The [University is saving millions](#), and setting a new standard for energy efficient buildings ... with no net use of water. [Maureen T., Rob R.]
- Geothermal Energy In Nevada - [Ormat Technologies](#) (Reno NV) is building a new 150 MW facility. [Details](#).
- Renewable Energy Booming In Ukraine - The old-school fossil fuel plants are highly centralized, dependent on pipeline and rail connections, and vulnerable to a single missile strike. Wind and solar farms generate power in a more distributed way, and are now [rapidly being added to the Ukrainian grid](#) - including the creation of local microgrids and [rooftop solar](#) to serve critical infrastructure such as hospitals, schools and defense manufacturing facilities. [1.5 GW of new solar generation was commissioned in 2025](#) - power for 1.1 million homes "[Needs must when the devil drives](#)." Smart ... timely, and desperate.
- Biogas In New Hampshire - [Purpose Energy](#) (Salem NH) is proposing to build New England's largest [biogas](#) anaerobic digester on a 17 acre site in Londonderry NH. The \$18 million '[Southern New Hampshire Green Energy Campus](#)' will process 350 tons of organic waste per day (expandable to 750 tons) into biogas (methane), refine it, and pump it into a nearby natural gas pipeline - also producing compost fertilizer. Some are calling it 'The Big Stomach'. It doesn't smell, and will save an enormous amount of landfill space that would leak methane. Win win win. [Barbara R.]
- Romania - shows that increased GDP and lower petrochemical emissions can be achieved together. See an impressive chart of their progress, [here](#). Solar, on-shore wind, and nuclear. [Background](#). Well done!.
- The Renewable Energy Revolution In The US - But Shhhh! Don't tell anyone. It seems to be a secret In 2025, 57 GWh (delivering power at 28 GW) of *new* battery energy stationary storage (BESS) was installed ... a 29% increase over 2024. California, Texas and Arizona led the charge. In 2026, new BESS installations are set to increase to 70 GWh (delivering power at 35 GW). [Report](#) from the Solar Energy Industries Association. Done by [market forces](#).
- The EU's Biggest Coal Mining Region - [Silesia](#), in Southern Poland, is [shifting away from its centuries-long coal mining](#) tradition toward sustainable energy sources such as geothermal. In the process they are adding jobs in electronics, machinery, and the creative industries. Former mines have now become offices, cultural centers, and technology hubs. A graceful transition that embraces rather than resists technological change - sets a good example.
- Hudson Rail Tunnel Project - is the \$16 billion project to build a new rail tunnel connecting New Jersey and Manhattan NY. It will upgrade and take the strain off the 110-year-old existing tunnel, and speed the new generation of fast Amtrak trains. Now that the federal project grant has been restored, the Gateway Development Commission has restarted work.[Details](#).

Other Science News -

- Hypersonic Scramjet Aircraft Launched From Virginia - The Mach 7 rated [DART AE scramjet](#) from [Hypersonix](#) (Queensland Australia, video) mounts on a [HASTE](#) 3-D printed, carbon

composite, hypersonic rocket from [Rocket Lab](#) (Long Beach CA), and was boosted to the required *minimum* initial start-up hypersonic speed (>Mach 5) from the Rocket Lab launch complex on Wallops Island VA - fourth Rocket Lab hypersonic launch in 6 months! *Speeeeed!*

- [New 125 MPH Amtrak Trains Arriving Soon](#) - The new fleet of [Airo](#) [video] rail cars will run first in the Pacific Northwest this year, and in the Northeast in 2027 - built by Siemens in California. See a preview, [here](#). [Dyane P.]
- [Lost City Rediscovered](#) - The city at the confluence of the Tigris and Euphrates Rivers in present day Iraq, founded by Alexander the Great in the fourth century BCE, has been lost for 1,200 years - [map](#). Now located by drone-mounted, optical scanning equipment from the air, and ground based cesium magnetometers, archaeologists have constructed a computer model of the ancient city ... since ground-truthed by an old-fashioned dig. [Details](#). [Kamal S., Sarah F.]
- [Archaeologists Sniffing Mummies](#) - have variously described the scent as woody, spicy or sweet. A more analytical approach involved taking samples of the shroud and doing the wet chemistry analysis, but too much sampling is a bit hard on the mummy. Scientists at the University of Bristol (UK) have now devised a method for sampling the volatile organic compounds (VOCs) emitted by a mummy, and then using gas chromatography and mass spectrometry to identify the organic compounds involved - fats, oils, beeswax, plant resin, bitumen, and resins/oils from trees like pine, juniper, and cedar. [Details](#) and a [publication](#). Modern embalmers may have something to learn [Jenna D.]

[Nice Thing](#) - [full screen] [Bill McC.]

[Jug of Punch](#) - Liam Clancy and Tommy Makem, Irish folk singers, [here](#).

[Rocky Road To Dublin](#) - Liam Clancy and Tommy Makem, [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.

