

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be Wednesday, Sept 9 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:

- HPV Vaccination And Cervical Cancer
- Cyclosporiasis
- CODE ORANGE AIR QUALITY ALERT FOR DMV (7/17)
- New Surgical Robot
- Adult Heart Stem Cell Implants For Severe Heart Failure
- [Fiber](#) - can reduce the risk of heart disease, type-two diabetes and certain types of cancer
- Popular Joint Pain Supplement May Increase Risk Of Dementia
- Trees In the Sahara Desert
- Iraq Discovers Solar
- One More Giant Solar *Module* Factory For Texas
- Ukraine Air Drones, Autonomous Robot Warriors, Guided Glide Bombs

Science Report Highlights

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.

- [Acetaminophen \(Tylenol\)](#) - Note the FDA guidelines for avoiding overuse, [here](#). Harvard Health [says](#) "Be cautious, but not afraid" Tylenol deals with symptoms (fever and pain), but does not actually reduce inflammation.
- [HPV Vaccination And Cervical Cancer](#) - Vaccination of girls 12-13 for the human papillomavirus (HPV) has been in wide use (80–90% coverage) in the UK since 2008. A UK study [published](#) this July indicated that there had been *zero* deaths due to cervical cancer in England in the 2020-2024 period. HPV is communicable. Both boys and girls should be vaccinated. [Details](#).
- [Cyclosporiasis](#) - CDC alert on this fresh-food-borne parasite ([Cyclospora](#)), [here](#). As of 7/13, 400 cases of cyclosporiasis have been reported to CDC from MI, OH, WV and KY. Cleveland Clinic information [here](#).
- [CODE ORANGE AIR QUALITY ALERT FOR DMV \(7/17\)](#) - due to [Canadian and midwestern wildfire smoke](#), children, older adults and those with asthma, heart disease or other lung conditions, should limit strenuous outdoor activity. The

wildfire season is just beginning. Do monitor the [National Weather Service](#) Air Quality Index ([AQI](#))

Vaccine and Therapeutic News -

- New Surgical Robot - The new [Intuitive](#) (Sunnyvale CA) surgical robot, Da Vinci 5, allows [multiple simultaneous entry](#) surgery, and has 10,000 times the computing power of the previous model. Details and a video, [here](#). [Amy S.]
- Cardiac Mitral Valve Regurgitation (MR) - [Edwards Lifescience](#) (Irvine CA) has [announced](#) FDA approval of its SAPIEN M3 Transcatheter Mitral Valve Replacement system, indicated for the treatment of symptomatic moderate-to-severe or severe MR in patients unsuited for surgery or transcatheter edge-to-edge repair (TEER) ... not suited for open heart surgery.
- Adult Heart Stem Cell Implants For Severe Heart Failure - Researchers at the Mayo Clinic have developed a method for inserting and [implanting lab-grown heart cells](#) through a small incision (no open heart surgery) into the surface of the patient's heart. Preliminary results are encouraging ([publication](#)), and they plan to proceed to human trials.
- Graft Rejection During Stem Cell Transplantation For Blood Cancer Treatment - FDA has [approved](#) Tregzi, the first regulatory T cell-based immunotherapy (Treg) for reducing implant tissue rejection from bone marrow or stem cell transplant procedures. [Orca Biosystems](#) (Menlo Park CA). Company press release [here](#).
- Rejuvenation Of Damaged Human Cells - Biotech company [Life Biosciences](#) (Boston MA) has [announced](#) first dosing in its Phase 1 human trial for their therapeutic agent ER-100 (AAV2-OSK), targeting glaucoma. If successful, this would be the first time cells have been rejuvenated in humans. Yes! [Details](#).
- Can GPL-1 Weight Reduction Drugs Slow Cancer? - Recently [presented](#) Cleveland Clinic research suggests that the progression of 4 types of cancer can be slowed: lung, breast, colorectal and liver. [Clinical trials needed](#). [Barbara R.]

Other Health Science News -

- 8 Dangerous Things Middle-Aged Men Do - according to a cardiologist, and how to protect their hearts, [here](#).
- Fiber - can reduce the risk of heart disease, type-two diabetes and certain types of cancer, but according to the American Society for Nutrition less than one in ten Americans are getting the [recommended amount](#). Natural foods are the best source, aiming for five [different fiber sources each day](#). Supplements only with a doctor's advice.
- What Orthopedic Surgeons Do For Fitness - See [twelve practical exercises](#) they use to maintain knees, hips, spine.
- 12 Medications Not To Take With Coffee - [here](#). At a different time of day might be OK, but check with your doctor.

- Is It Dementia, Or Vitamin B12 Deficiency (Reversible) - The cognitive impairment symptoms can be similar. According to the Director of Geriatric Cognitive Health, [Pacific Neuroscience Institute](#) (Santa Monica CA) "[Vitamin B12 deficiency can cause cognitive impairment , including impairments in thinking.](#)" Since many older people have trouble fully absorbing dietary Vitamin B12, do check B12 levels routinely during annual physicals.
- Popular Joint Pain Supplement May Increase Risk Of Dementia - A new study [published](#) in June by University of Florida researchers indicated that *regular* use of the over-the-counter pain reliever [glucosamine](#) to relieve pain from knee joints and osteoarthritis *may* accelerate existing mild cognitive impairment. 1 in 4 older Americans take glucosamine to relieve symptoms (not causes) of joint pain. [Details from AARP.](#)

Practical Nutrition - .

- Which Carb Spikes Blood Sugar The Most? - Rice, potatoes or pasta. The variety chosen, and the method of preparation, make a substantial difference. See the [explanation](#), and a table laying out the [glycemic index](#) numbers.
- Cranberry Juice And Pomegranate Juice - Both are good antioxidants/anti-inflammatories. According to a registered dietitian, [pomegranate juice](#) is better for controlling blood pressure, and for heart health. [Cranberry juice](#) is better for lowering the risk of urinary tract infections. [Details.](#)
- Pistachios Or Peanuts For Protein And Fiber - [Details](#), from a registered dietitian. Summary: both have good protein, but pistachios are a 'complete' protein. Peanuts must be paired with other protein sources for the complete range of amino acids needed. Pistachios have a bit more fiber, and a wealth of vitamins. [Both are healthy.](#) Watch the salt.
- Refrigerate Onions? - No. Keep them in a cool (45° F to 55° F) dark place. Refrigerate when [cut](#), sliced or peeled, and store in air-tight containers.
- The Best Store-Bought Bread - of the 56 rated by Consumer Reports for health and taste, was 'Food For Life, Organic, Flourless, [Sprouted Grain Ezekiel 4:9 Bread](#)' ... zero sugar, low salt, high in protein/fiber/whole-grains. Look for it in the [frozen](#) foods section of the grocery (no preservatives). [Details.](#)
- Harvard Health On Natural Foods That Strengthen Bones - and some low impact exercises that also help, [here](#).
- Morning Oatmeal - 12 natural foods a registered dietitian recommends adding for additional energy and appetite/weight control, [here](#). Alert: make sure that sweeteners like stevia or monk fruit *don't* contain erythritol.

Environmental Science News -

- Trees In the Sahara Desert - They kept planting trees along the southern edge of the desert, and they kept dying. The daytime temperature there can reach 140° F, with the soil baked into such a hard crust that rain can't penetrate to be retained. Then

they released 500 [African Spurred Tortoises](#) (*Centrochelys sulcata*) ... nature's own excavators that burrow as deep as 50 feet. Now the rain could be retained. Five years later, trees dotting the African landscape could be seen from orbit. Details, a map, and a photo of trees in the desert, [here](#). Life is powerful.

- [Uganda Announces E-Mobility Strategy](#) - and expects to transition its system of buses and motorcycle-taxis to an [all electric fleet by 2030](#). Ambitious! The transition will rely on [KMC](#) (Kiira Motors Corporation), a Ugandan state-owned EV manufacturer based in [Jinja](#).
- [PFAS Drinking Water Contamination In Wisconsin](#) - The US Environmental Protection Agency (EPA) has awarded a \$15 million grant to the state to help communities and private well owners deal with this issue. [Details](#).
- [AI Managed EV Battery Charging](#) - can extend battery life by as much as 23%, according to recently [published](#) research from [Chalmers University of Technology](#) (Gothenburg Sweden). [Background](#).
- [Washington State Adds Wind Energy](#) - [Puget Sound Energy](#) (Bellevue WA, [map](#)) has contracted for energy from a wind farm in [Klickitat County WA](#) called [Big Horn I](#). The existing facility, owned and operated by renewable energy company [Avangrid](#), occupies a 14,000 acre site just North of the Columbia River. The upgraded/rebuilt facility will produce [200 MW of power, enough for 70,000 homes](#), and will be back in operation in about two years.
- [Solar Power Plus A Biodiversity Boom](#) - Researchers from the US Department of Energy's Argonne National Laboratory and National Renewable Energy Laboratory, running a 5 year field study ([Aurora Solar Project](#)) at solar sites in southern Minnesota, discovered that [planting native wildflowers and prairie grasses beneath solar panels](#) promoted biodiversity. They planted native flowers, pollinators came, native plants and grasses spread, and now they have [monarch butterflies](#)!
- [India Makes Its Own Solar](#) - solar panels integrated with sun tracking frames. The Indian subsidiary of US company [GameChange Solar](#) has [announced](#) a partnership with the Bengaluru India based subsidiary of US company [First Solar](#) (Tempe AZ) to deploy thin-film solar panels manufactured entirely in India, meeting Indian supply chain requirements for domestic manufacture. Two utility-scale solar farms using their equipment are already in operation.
- [Fuel Prices Increases Boost Electric Motorbikes Across Africa](#) - They're called Boda-Bodas in Kenya. Charging is by exchanging batteries (takes 2 minutes). They cut fuel costs, are quieter (hummm not roar) and are emission free ... big impact in Nairobi Kenya, [here](#). Kenya's electric power is 93% geothermal, hydroelectric, solar and wind.
- [Vietnamese EV Car Company Produces One Millionth E-bike](#) - [VinFast](#) (Hải Phòng Vietnam) is known in the US for its line of EVs, but also dominates the Asian [E-bike](#) market ... Vietnam, Indonesia, the Philippines, India, Thailand, and Malaysia. The company is building an EV and battery plant in North Carolina, operational 2028 [CC, Peter M-K.]
- [Iraq Discovers Solar](#) - The national grid can't keep up with demand, especially in the Summer. Even on a good day it only supplies private households 8-12 hours of

electricity. Supplies of natural gas from Iran have been unstable lately, keeping some Iraqi power plants off-line. The government has responded by reducing import duties for solar components from 33% to 5%, and arranging loans for citizens and small businesses to fund solar projects. Imports of solar panels have responded by *quadrupling* from 2024 to 2025, rising from 0.43 GW to 1.89 GW. More solar power won't solve all of Iraq's energy problems, but it can definitely be a part of the solution. [Details](#). [Kamal S]

- [Texas Overtaking California On Grid-Scale Energy Storage](#) - per a [report](#) from [Solar Energy Industries Association](#).
- [Massive New Renewable Energy Project In Western India's Rann of Kutch](#) - The [Khavda Solar Park](#) will become the world's largest solar park ... 30 GW (solar+wind), equivalent to the output of 30 nuclear reactors (enough to power the entire country of Austria, or 18 million homes), 60 million solar panels, 280 square mile remote desert site, uses robots to clear salt and dust from the panels at night (no water needed), [9.4 GW already online](#), complete by 2029. Wind energy, HV transmission lines, and a 14 GWh grid-scale battery storage system are included. Big!!
- [More Solar In Texas](#) - [Enbridge](#) (Calgary AB, Canada) just [turned on the first phase](#), at 400 MW, of its [Sequoia Solar](#) project in Callahan County, southeast of Dallas. The second phase will add 415 MW by the end of this year. The Company has advance-power-purchase contracts with AT&T, Toyota, PepsiCo, and Donaldson Company.
- [Stages For Manufacturing Si Solar Panels](#) - Pure polysilicone material > ingot > wafer > cell > solar module/panel.
- [One More Giant Solar Module Factory For Texas](#) - [SEG Solar](#) (Houston) is planning a third large Silicon heterojunction (HJT) solar [module factory in the Houston TX area](#) ... 4.6 GW annual capacity, 1.15 million ft2 factory+warehouse. The company is also looking upstream on its supply chain to develop an Silicon *ingot* and *wafer* manufacturing facility in Indonesia ... and is evaluating potential US sites for a dedicated HJT solar *cell* factory.

Other Science News -

- [AI Land/Sea/Subsea/Air Drones, Autonomous Robot Warriors, Guided Glide Bombs, 911 Calls](#) -
 - [UGVs Teamed With Flying Drones](#) - Ukrainian robotic defense systems maker [DevDroid](#) (Kiev Ukraine) says that pairing the two opens up [more options on the front](#). Ukraine replaced human troops with war robots (UGVs, unmanned ground vehicles) in more than [21,000 missions so far in 1Q26](#)!
 - [Ukraine's First Satellite-Guided Glide Bomb](#) - DG Industry (Kiev Ukraine) has sent 'The Leveler' to the front ... cheap, mid-range, 550 lb payload, winged, engineless, aircraft dropped. Details and an ominous video, [here](#).
 - [Ukraine Using AI-Mediated Real-Time Satellite Targeting](#) - based on real time images from the [Vantor](#) (Westminster CO) commercial satellite system

... previously 'Maxar Intelligence'. Fast, precise (<16 ft) ... and devastating. [Details](#), and an example. [Video](#).

- [Wardog TRN](#) - is a [Roboneers](#) (Lviv Ukraine) drone used as a radio repeater, extending the range for other drones as a "force multiplier," so Ukraine's mid-range strike drones can operate deeper behind Russian lines.
- [Secret Drone Factories](#) - in Western Ukraine are turning out thousands of combat drones *per week*, including the new, heavy lift Vampire. Details, a video, and good photos [here](#).
- [Ukrainian Liutyi](#) (Fierce) Long-Range Drone - Explosive payload 150 pounds, 15 feet long, [range 1,300 miles](#).
- [Rusty Dagger](#) - is the [low-cost cruise missile](#) already being provided to Ukraine by [Zone 5](#) (San Luis Obispo CA). The company is now being acquired by [Kongsberg Gruppen](#) (Norway), which will continue production.
- [Ukraine's Robot Ground Army](#) - See the [story](#) of how a team of three UGVs (unmanned ground vehicles), led by a Thor 800 unmanned off-roader equipped with a grenade launcher, crosses tens of miles of 'kill zone' ([video](#)), and takes out a heavily fortified Russian strong point. No Ukrainian soldiers were put at risk. [More](#).
- [Ukrainian Uncrewed Ground Vehicle](#) - See the [Zemi](#) (snake) remotely controlled UGV trundling through the woods ... 1,700 pounds, 5x7 feet, 2.4 foot wheels - used for demining, logistics, fighting fires, firing a machine gun, or launching grenades. No Ukrainian troops in the kill zone.
- [New Mid-Range Ukrainian-Made Drone Unveiled](#) - The [MORRIGAN](#) is named after the crow-like mythological [Irish goddess of battle and war](#), a protector of her people and territory. The new drone is being very effectively used to interdict military and logistical traffic on the highway that runs along the Sea of Azov in occupied SE Ukraine. [Details](#). Rail launched (no runway), propeller driven, fixed wing, 5 feet long, range up to 186 miles.
- [Ukraine Mid-Range Drones Replace US-provided HIMARS](#) - and are defeating Russian jamming, [details](#).
- [US Army Reorients To Drones](#) - Orders for new Apache, Black Hawk and Chinook have been cut-back drastically, along with corresponding plans to cut 6,500 active-duty aviation positions in 26/27 ... pilots, flight crews and maintainers. [AI will do the flying](#). Cost-effective is good, as is reduced risk to US Army personnel.
- [Sound As A Drone Defense](#) - [Sound Shield](#) from [Neuron Soundware](#) (Praha, Czech Republic) uses microphones attached to small sensors called 'nEdge Minis', reporting to an AI-platform powered by Nvidia's [Jetson modules](#). It zeros in on the distinctive whine made by propeller-driven drones. Since it operates passively, it can't be detected on the battlefield ... radar evading stealth is useless. [Details](#). Doom!
- [Small/Deadly/Cheap Shahed-Hunting Drone](#) - The 1 pound, 1 foot long, 225 mph, 1.9 mile range 'K100XR', made by Swedish defense company [Nordic Air Defence](#) (Stockholm) can climb up to 3,300 feet, loiter for 20 minutes, with

onboard AI to detect/classify/track hostile drones without input from an operator ... *at night*.

- VAMPIRE - The US Army has [ordered](#) the Vehicle Agnostic Modular Palletized ISR Rocket Equipment anti-drone system, [battle tested in Ukraine](#), and L3Harris now has it in high volume production in Huntsville AL
- New Russian Jet-Powered Attack Drones - The Geran-3, 4 and 5 drones are powered by Chinese jet engines. Geran-4 has a range of up to 280 miles at 310 mph with a 200 pound warhead. [Geran-5](#) might fire missiles. Jet-powered drones (not yet used widely) accelerate to flight speed on long rails before the engine takes over.
- Ukraine-Built Antiballistic Missile Replacement For Patriot - Ukrainian defense company [Fire Point](#) (Kiev), in collaboration with EU defense companies, has already tested a pilot version successfully, and expects to be in production in 2027 - similar capabilities. The [FP-7.X \(Freyja\) missile](#) costs <\$1 million, not \$5.3 million. Their motto: 'Quis Nisi Nos' (if not us, then who).
- [Wild Hornets](#) - is the Ukrainian defense company that makes the \$2,000 drone interceptor drone [Sting](#), designed to go after \$20,000 to \$50,000 Russian Shahed attack drones. [Scary video](#) ... 175 mph, 23,000 feet.
- Israeli Antidrone Pulse Laser System - The [Esh-Tech](#) (Beersheba Israel) 'DroneLight' operates more [like a drill](#) than a flamethrower. Five holes per second makes a kill more certain, at [25% of the cost](#) of current laser or microwave systems. Range 0.6 miles, tracks and automatically fires at multiple fast-moving drone swarms using radar, sound detection, and optical sensors, can take down 30 drones per minute.
- International Drone Design/Production Agreements - Ukraine has entered into mutual drone production agreements with European and Mid-Eastern governments, and recently with [Canada](#) ... including the incorporation of quantum encryption in field radios. [Details](#). Similar discussions are underway with the US.
- Germany Finances 50,000 Drones For Ukraine - First Person View (FPV) drones to be manufactured by Ukrainian drone company [SkyFall](#), with autonomous targeting software from US company [Auterion](#) (ominous video, Arlington VA) ... some already delivered. [Details](#).
- Honduras To Buy Ukrainian Drones To Help Control Drug Trafficking - [here](#).
- Drones Responding To 911 Calls - The Stockton, CA City Council has approved the purchase of a system of drones for this purpose, interfaced with its existing network of license plate readers. The expected flight time, from their automatic launch to the start of real-time aerial video coverage on-site, is 30 seconds to 4 minutes.
- A Bold NASA Plan - to save the Neil Gehrels Swift Observatory ([SWIFT](#)) by sending a space tug built by [Katalyst Space Technologies](#) (Flagstaff Arizona) to boost it back up into a safe orbit. If they fail to do it on time, it will crash and burn. SWIFT specializes in detecting and mapping gamma ray bursts. [Details](#). July 8 [update](#).

Nice Thing - [full screen]

- The Rose - composer Amanda McBroom, [sung](#) *a cappella* by The King's Singers, The Temple Church, London 2019.
- The Rose - composer Amanda McBroom, [sung](#) by Bette Midler, 1979 music video. Very sad, but captures the spirit.
- The Rose - composer Amanda McBroom, [performed](#) by the Johann Strauss Orchestra conducted by André Rieu in Mainau, 2014. [stay on for one more version]

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.