

## **Betsy says HI!!!!**

### **Announcements**

**The next LABQUEST meeting will be Wednesday, December 10, location TBD.**

### **Science Report Highlights**

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

- Recall Of Blood Pressure Medication - Prazosin Hydrochloride capsules
- mRNA As A Tool For Developing *Personalized* Cancer Therapies
- Reducing Peanut Allergy Risk
- Ideal Sleep Temperature
- Multicancer Blood Test
- Geothermal Energy – three items
- Yes Virginia! Yours Is The Biggest - offshore wind farm in the US!
- Discovery Of New Metal Alloy Allowing More Efficient Jet/Turbine Design

### **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 -**

- [Recall Of Blood Pressure Medication](#) - FDA has [announced](#) the recall of 580,000 bottles of Prazosin Hydrochloride capsules. [Details](#)
- [Heartburn And Acid Reflux](#) - Omeprazole is a proton pump inhibitor (PPI) often prescribed for this condition. Researchers in the UK are now suggesting an association between taking PPIs and the [increased risk of migraines or severe headaches](#). [Publication](#). [CC]
- [mRNA As A Tool For Developing Personalized Cancer Therapies](#) - [Moderna](#) (Cambridge MA) has [several such therapies currently in human trials](#). First the patient's genome, and the genome of their cancer, is mapped. Then an mRNA (messenger RNA) molecule is designed with instructions to make proteins that stimulate the immune system to attack that particular patient's particular cancer cells, and nothing else. The approach is called 'Individual Neoantigen Therapy'. We're closing in on a killer. *Bonne chance!*
- [Metastatic Head And Neck Squamous Cell Carcinoma \(HNSCC\)](#) - [Janssen Pharmaceuticals](#) (Beerse Belgium, subsidiary of [Johnson & Johnson](#)) is achieving encouraging preliminary results in human trials for this indication with its medication 'amivantamab' - tumors shrank or stopped growing in two thirds of the test group. [Details](#). Not yet reviewed by FDA.

- Reducing Peanut Allergy Risk - Research recently [published](#) in the peer reviewed journal *Pediatrics* concluded that data support [early introduction to peanuts as a way to reduce the risk of allergic reaction](#). Carefully, under a pediatrician's supervision.
- Menopause - FDA has approved the oral administration, non-hormonal [Beyer](#) (Leverkusen Germany) medication [Lynkuet](#) for this indication. [Details](#).
- Oral Weight Reduction Medication - Phase 3 human trial investigators reported favorable preliminary results at a recent scientific meeting for the Eli Lilly (Indianapolis IN) oral medication 'orforglipron'. [Details](#). FDA National Priority Voucher announcement, [here](#).

### Other Health Science News -

- Ideal Sleep Temperature - According to a sleep psychologist, above 70° F is too hot, and below 60° F is too cold. She says the ideal range is 60-67°F, and to think of your bedroom as your *cave*. "It should be cool, dark and quiet to enhance your sleep." [Details](#)
- Dark Showering And Sleep - See a psychologist's advice, [here](#).
- The 8 Hour Sleep Myth - According to a Harvard evolutionary biologist the 8 hour sleep requirement is an industrial age myth, with 6 6 to 7 hours being usual before electricity and modern distractions from sleep quality.
- Food/Exercise Choices To Lower Dementia Risk - even for those with a genetic disposition to dementia or Alzheimer's disease, such as having two copies of the APOE4 gene, [here](#). [Publication](#). What food to choose, [here](#).
- Floss Or Brush First - A dentist advises that flossing should come first, *then* brushing. His reasoning [here](#). Research has associated good dental health with good cognitive health beyond middle age. [Publication](#).
- Nightmares And Dementia - Several studies have shown an [association between dementia and nightmares](#) (distressing dreams that result in waking-up), with middle aged as well as senior volunteers ... association stronger in men. Research discussion [here](#).
- Researchers Identify Two Additional Dementia Risk Factors - untreated vision loss, and high LDL cholesterol after 40. See the details, and a list of the 12 other known risk factors, [here](#). [Publication](#).
- Unexpected Sign Of Colon Cancer - [here](#). Rates for those under 50 have been [increasing](#) since the 1990s.
- 11 Possible Causes For Post-Workout Knee Pain - [here](#).
- Multicancer Blood Test - The [Galleri Test](#), which may be able to test for, or rule out, over 50 types of cancers, is undergoing human trials sponsored by [Grail](#) (Menlo Park CA). [Preliminary results](#) are encouraging. [Potential as a screening test](#) for early detection.
- H5N1 Bird Flu Reaches Germany - spread by migrating wild cranes, [here](#). Over 500,000 farm-raised chickens, ducks, turkeys and geese have already been culled to protect poultry on other farms. [Video](#). [Sonja B., Hugo]

### Practical Nutrition -

- Brown Flax Vs Golden Flaxseed - A doctor makes the comparison, and [concludes](#) (video) that *brown* is better because it contains 60% more anti-cancer [lignans](#). He further advises the use of *ground* flaxseed for greater bioavailability ... ground yourself in a spice grinder, or purchased ground (stores well). Do not substitute flaxseed oil, since it has been stripped of lignans.
- Red Vs. White Onions - Both are good, according to a registered dietitian, but red onions are a bit better because the color comes from [anthocyanins](#) and quercetin, powerful

antioxidants/anti-inflammatories that can be hard to find. They also have twice the fiber. See the details and a side-by-side nutritional rundown [here](#). Cooked ... good. Raw ... more powerful.

- [Brown Rice Vs. White Rice](#) - Brown rice has three times the fiber, and higher levels of iron and the B vitamins. Black, red, and wild rice deliver added antioxidants, and more fiber and protein. [Details](#).
- [Apples Vs. Oranges](#) - [Oranges have a broader nutritional profile](#) ... 100% of the daily value of vitamin C, more vitamin B6, folate, calcium, copper, and potassium. If the blood work from your physical exam indicates a shortage of vitamin K, apples have that. Tune-up: choose organic, fresh/frozen (not canned). The scrubbed rinds of cara-cara oranges can be eaten for a *big* nutrient boost.
- [Milk Vs Yogurt](#) - [Yogurt has more calcium, and way more protein](#). Also, the lactic acid in the fermented yogurt promotes [calcium](#) absorption. As a further bonus, the living cultures in the fermentation process used in making yogurt provide gut-friendly probiotics.
- [Full Fat Milk Vs. Low Fat Milk](#) - Researchers conducting a large study in Norway concluded that those who drank low fat milk, as opposed to full fat milk, had a 11% lower all-mortality risk and 7% lower risk of cardiovascular disease. [Details](#). The study did not cover fermented dairy products such as [aged cheese, cottage cheese, yogurt and kefir](#) ... and there's reason to suppose that these may be a net health plus regardless of fat content. No butter.
- [Brussel Sprouts Vs. Broccoli](#) - Whereas a registered dietitian says both are good, [brussel sprouts](#) are better on all important [fiber](#). [Here's](#) the rundown on broccoli - antioxidants, vitamins C and E, folate. Don't boil ... sprinkle with parmesan for flavor.
- [Eggs Vs. Oatmeal](#) - Choose eggs for protein to help you feel full, and provide vitamins. Choose oatmeal to improve heart health by lowering cholesterol and blood sugar, and boosting fiber. Both together are even better. Details and a nutritional run-down, [here](#).
- [Butternut Squash And Their Skins](#) - are healthy according to a registered dietitian, [here](#) ... fiber, antioxidants, vitamins A and C, flavonoids, carotenoids (including beta-carotene), lutein, and cryptoxanthin. Small and medium squash may be scrubbed, roasted and eaten unpeeled, but the skin can also be peeled off to be pureed/frozen and used later in soups and sauces for the full benefit.
- [Olives](#) - Good for fiber, antioxidants and vitamin E, but watch the salt. [Details](#)
- [10 Breakfast Foods To Avoid Inflammation](#) - [here](#).
- [Six Reasons Not To Drink Conventional Sodas](#) - [here](#).
- [Almonds+Dark Chocolate=Healthy](#) - according to a registered dietitian ... in moderation, **dark** chocolate >70% cacao, [here](#).
- [No Chocolate Before Bed](#) - because it has two stimulants, [caffeine and theobromine](#), that can interfere with your sleep.
- [What Does A Cardiologist Eat For Dinner](#) - to avoid inflammation and [cardiac disease](#)? [Here](#) .... also find some tasty recipes.
- ["It's What's Not In The Bag"](#) - are the *big* letters on the side of the grocer's new paper grocery bags, and then in *small* letters covering the whole bag there's a list of the 562 ingredients that the company *bans* (because they're unhealthy). What grocery store could that possibly be? Video [here](#). [Thanks Barbara R.]

## Environmental Science News -

- [Geothermal Energy](#) -
  - [Geothermal Energy In New Mexico](#) - has **huge** potential, tapping into a hot aquifer that can *directly* heat buildings or spin a turbine. A study done by [Project](#)

[InnerSpace](#) [good video], the New Mexico Institute of Mining and Technology and the Bureau of Geology and Mineral Resources pointed to Santa Fe, Rio Arriba, Sandoval and Taos counties as the best candidates. Details and a map [here](#). They found the total potential to be 163 GW, power for millions of homes! What makes New Mexico special is the [Rio Grande Rift](#), where the earth's crust and mantle have been stretched and fractured by tectonic forces, bringing heat close to the surface. Currently the [Lightning Dock Geothermal Plant](#) is the only one in the state, but [NM Governor Grisham has big plans](#). Go!

- [Geothermal In Waldkraiburg \(Bavaria Germany\)](#) - The town has a \$20 million plan to complete a [second geothermal district heating plant](#) by 2027. The first, built in 2012, produced energy for 70% less than conventional sources! [Sonja B.]
- [No Power Bills ... In Texas ... In July?](#) - They're close to that using a shared geothermal system in a fully geothermal neighborhood in Austin TX. [EcoSmart Solution](#) (Manor TX) has constructed such a system to serve homes in part of the [Whisper Valley](#) development, [Details](#). It's also happening near Boston, [here](#) [good diagram]. 'Ground source heat pump geothermal' doesn't need the special deep geology described in the bullet above, and can be installed in most parts of the US. [Mike and Jaqui K.]
- [Super Hot Rocks In Oregon](#) - Enhanced (deep) Geothermal Energy developer [Mazama Energy](#) (Frisco TX) recently announced that the bottom of a recently drilled borehole in Oregon measured 629° F, [here](#). They project that one such site could produce enough energy to power thousands of homes on a 24/7/365 basis. Stay tuned for news from the company's 200 MW, US Department of Energy supported, [pilot project](#), now in progress at the Newberry Volcano in Oregon.
- [See The Rocks Beneath Your Feet](#) - using this newly issued [all-US set of mapping tools](#) from the US Geological Survey.
- [Avoiding Wildfires In California](#) - Pacific Gas and Electric (PG&E) has undergrounded more than [1,000 miles of HV power lines](#).
- [Chardonnay And Agrivoltaics In Colorado](#) - See this [photo](#) of the Colorado state viticulturist overseeing the installation of solar panels at the Western Campus of Colorado State University in Grand Junction CO ... to enhance and protect his research plot of Chardonnay grapes. 7-foot-long solar panels, 14-foot tall steel structure positions panels *above* the grapes, 240 solar panels, tracks the sun from east to west, 155 MWh annually (40% of the energy used by the Western Campus). Win win! [Maureen T.]
- [Grain Crops And Agrivoltaics In Illinois](#) - [Sol Systems](#) (Washington DC) has powered up its [Eldorado Solar](#) project in Southeastern Illinois ... 342 MW, solar tracking, 750,000 [TOPCon](#) (tunnel oxide passivated contact) modules from [Canadian Solar](#) (Guelph Canada) mounted on elevated frames, row-crop grain crop, pollinator and small animal habitat. The deep rooted, *perennial* grain [Kernza](#) will be grown between the rows of panels - high in fiber, carotenoids, antioxidants and protein ... often used in baking and beer brewing for its nutty flavor.
- [University Gets Floating Solar In Florida](#) - Nova Southeastern University (Ft. Lauderdale FL) is the [first university in the US with a commercial floating solar photovoltaic system](#) - 700kW array, 1,200 solar modules, hurricane proof mounting, developed by [D3Energy](#) (Hialeah Gardens FL), will power student housing, under construction now. [Details](#).
- [The Chargers Keep Charging Along](#) - The US is Adding EV Chargers at a Record Pace ... 780 public high-speed charging stations opened in 3Q25! Truck-stops are leading the charge. [Details](#). [Phil J.]

- [Revolution Wind](#) - is a 65 turbine, 704 MW wind farm (power for 350,000 homes) under construction offshore from Rhode Island and Connecticut. Revolution has just connected its first turbine, restarting construction after an unexplained shut-down by the federal government. As Rhode Island Governor Dan McKee said at the ceremony - "Rhode Island is excited to build upon this progress and lead in clean energy and the offshore wind economy for decades to come." Right on Guv! [Julian G., Harvey B.]
- [Yes Virginia! Yours Is The Biggest](#) - offshore wind farm in the US! The [Dominion Energy](#) (Richmond VA) 2.6 GW 'Coastal Virginia Offshore Wind' (CVOW) project, 30 miles offshore from Virginia Beach, is expected to [generate first power 1Q26](#), and be complete 4Q26: \$6 billion, 176 turbines, installed by Charybdis (first US built wind-turbine installation vessel). Photos/details, [here](#). Well done!
- [Furniture Store Without Furniture](#) - IKEA is planning to open a '[plan and order](#)' store in Washington DC's posh Georgetown neighborhood ... not its traditional large-format warehouse store. Cost, energy and space efficient. Well done. [Rachel D.]
- [Charge Your EV At A Lamp Post In Prague](#) - Photo and details [here](#). By 2026 the city expects to have 1,500 installed, 6,000 by 2030.

#### Other Science News - tba

- [Tungsten Mine And Refinery](#) - [Blue Moon Metals](#) (Vancouver Canada) has [announced](#) the acquisition of the Springer Critical Metals Mine And Processing Plant In [Pershing County Nevada](#) - 11,000 acres of mineral claims on private lands. The plant can be adapted to refine other defense [critical metals, and rare earths](#) such as those to be mined at Blue Moon's mine and refinery in [Mariposa County California](#). Could be a very productive connection. Stay tuned.
- [Establishing A US Supply Chain For Silicon-Based Solar Panels](#) - hasn't been possible, since the ultra-pure silicon ingots/wafers that form the basis for the silicon panel industry were all imported. [Hemlock Semiconductor](#) (Hemlock MI, subsidiary of Corning) has now [announced the start of ingot/wafer production at its Michigan plant](#). Of course there *are* [US-made solar panels not based on silicon](#).
- [Discovery Of New Metal Alloy Allowing More Efficient Jet/Turbine Design](#) - which translates to cheaper airline tickets, longer range missiles, cheaper electrical power ... since operating at higher temperatures improves efficiency. Scientists have [published](#) the details of a new alloy of chromium, molybdenum, and silicon. It maintains ductility at room temperature, while resisting oxidation in air up to 1,100 °C (2,012 °F), retains strength, and melts at 2,000 °C (3,632 °F)! Way better than state-of-the-art. Engineers?
- [NASA Discovers Secret US Military Base In Greenland](#) - They were flying over the Greenland ice sheet using NASA's [UAVSAR](#) (Uninhabited Aerial Vehicle Synthetic Aperture Radar) mounted to the belly of the aircraft to map the depth and contours of the ice bed, when up popped Camp Century, also known as The City Under The Ice. It was built during the cold war in 1959 by the US Army Corps of Engineers, and now lies under more than 100 feet of ice. When they left they took out the reactor that powered the base, but not the radioactive waste. [Details](#) and photos. [Map](#) of Camp Century layout. [Wade S.]
- [Burrows Under The Surface Of Mars](#) - Astronomers have long wondered what made them, and when. An Earth Scientist at the University of Utrecht theorized that they were dug out by sliding blocks of solid CO<sub>2</sub>, mobilized by sublimation (solid transitioning directly to gas) during Martian Spring. This allowed the heavy blocks to slide down the side of a dune, making a burrow, and then disappear by evaporation (sublimation) at the bottom. She then confirmed her theory [\[details and a very cool video\]](#) using Martian conditions in a laboratory. [Publication](#)

- [1000 Year Old Cemetary Discovered](#) - They were digging to construct a pipeline near the remains of a fortified medieval settlement in the village of Borkowo Poland, when they came across the first grave ... and then others. With the remains they also found arrowheads, a battle ax, knife blades, rings and carnelian (reddish semi-precious stone) beads. The site is from the time of the rise of Mieszko I ... the Duke of Poland who reigned from 960 to 992, united the country, and created an independent state. Connection?
- [Ancient Maya Cities Grew \(Size/Power\) When Wells And Other Urban Infrastructure Were Needed During Drought or Conflict](#) - They shrank when conditions in the countryside improved. There are no *surface* rivers in Yucatan, making rainfall (and propitiating the rain god Chaahk with frequent sacrifices) all important. Recently [published](#) research concluded that the same forces that built Maya cities also tore them apart. Lesson there for us?
- [The Zipper Gets An Upgrade](#) - for the first time since 1910 ... softer, more flexible garments, easier to sew, now on its way to market.

Nice Thing - [full screen]

Le Sacre du Printemps (Rite of Spring) - composed by Igor Stranvinski in 1913, originally choreographed by Vaslav Nijinsky, fully staged by the [Mariinsky Ballet](#) (St Petersburg Russia), 2018, pagan ... primitive ... sacrificial ... cacophonous ... disturbing ... [here](#).

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#### 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.