

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be Wednesday, January 14, location is WOMC in Philanthropy Conference Room on the 2nd floor of Medical Pavilion.

Science Report Highlights

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

- Farmed Cocoa Is Failing
- Lots of news on solar
- Will Tehran Need To Be Evacuated?
- Nuclear Reactors In Wales
- 27 Countries Set 2030 Wind Energy Targets
- 8 Deadly Long Range Ukrainian Weapons

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 – No news

Other Health Science News -

- [Microelectronic Devices Hybridized With Living Cells](#) - 'Circulatronics'? 'Click Chemistry'? At first the engineer/researchers at MIT were getting their grant proposals turned down. *Nice idea, but impossible* they were told. Then they won the [2022 Nobel Prize in Chemistry](#)! Now an injected, hybridized immune cell (monocyte) can carry its melded microchip across the blood-brain barrier (no surgery), and the immune cell's function can then be commanded wirelessly from outside the brain ... opens the door to non-invasive treatments for various neurological diseases such as Parkinson's, dementia, Alzheimer's, and others. Wow!! Stay tuned. [Publication](#)
- [Can Upper Back Pain Indicate Lung Cancer](#) - It's [more likely a sign of muscle strain](#) or kidney stones ... but if it li's persistent, escalating and accompanied by persistent coughing, weight loss or shortness of breath, *do* see a doctor
- Progress Toward Early Detection And Cure For Osteoarthritis - Details [here](#).

Practical Nutrition -

- [Farmed Cocoa Is Failing](#) - Due to drought and other climate change driven factors. See the future of cocoa grown by [California Cultured](#) (Davis CA) in fermentation vats, [here](#).

- [8 Natural Foods Rich In Vitamin E](#) - according to a registered dietitian, [here](#). Vitamin E is an antioxidant that can help prevent chronic disease. Tune-up: no seed oils, only avocado oil or extra-virgin olive oil.

Environmental Science News -

- [Microsoft Supports Solar In Japan](#) - The company has agreed to a 20-year, 100 MW power purchase contract with [Shizen Energy](#) (Japan) to power Microsoft data centers in Japan. [4 solar power farms will be constructed](#), one of which is already operating.
- [Floating Solar](#) - South Korea's \$50 million, 47 MW [floating solar project at Imha Dam](#), east of the city of Andong, is now operational. The dam already hosts a 50 MW hydropower plant. This allows for a steady, 24-hour supply of power. The 16 interconnected floating platforms are arranged to represent South Korea's flag, and Mugunghwa, the national flower - visible from space. Elegant.
- Solar Becoming Backbone Of US Energy Grid - with Texas leading the way. [Details](#).
- [Agrivoltaics In Italy](#) - [EDP](#) (Lisbon Portugal) has opened its first such plant in Europe, at Monti di Eboli ... 17,000 panels, 250 sheep, no lawn mowers needed. Background and photo, [here](#).
- [Will Tehran Need To Be Evacuated?](#) After 6 consecutive years of drought, summer temperatures reaching 122 ° F, and mismanagement of water allocations leaving reservoirs empty, [water rationing](#) has already begun in Tehran and other parts of Iran.
- [From Coal Fired To Star Fired In Minnesota](#) - [Xcel Energy](#) (Minneapolis MN) will fire-up the third and final phase of its expansive [Sherco Energy Hub](#) next year, solar+storage to begin replacing the 2,300-MW Sherco coal plant due to be fully retired in 2030. The company has now [filed for permission to double](#) the planned battery capacity at Sherco (600 MW total), add a 200 MW fourth phase of solar there (910 MW total), and a further 136 MW battery at a separate site. Clean fusion power from [Sol](#), the sun star. ☀️
- [Nuclear Reactors In Wales](#) - The UK has announced that it has commissioned Rolls Royce to build the [UK's first two 470 MW Small Modular Reactors \(SMR\)](#) - at Wylfa on the North Wales island of Anglesey for a total of \$3.3 billion, with future SMRs to be built at the company factory in Derby - [SMRs are usually manufactured in a factory](#), and *shipped* to their operating location. Wylfa is the site of a closed nuclear reactor (1971-2015), so the electrical grid infrastructure already exists. Two 3.2 **GW**, *full* sized UK reactors are already under construction by the French company EDF - Hinkley Point C in Somerset, and Sizewell C in Suffolk. [Jason W.]
- [Toyota Battery Plant In North Carolina](#) - [Toyota](#) has [announced](#) that it has begun production at a \$13.9 billion battery manufacturing plant on an 1,850 acre site in Liberty North Carolina. The company expects to produce 30 gigawatt-hours of lithium-ion batteries annually to power its lineup of hybrid, plug-in hybrid, and fully electric vehicles. Additional production lines are expected to launch by 2030. This will be Toyota's first battery plant outside Japan.
- [New Solar Module Manufacturing Plant In South Carolina](#) - [First Solar](#) (Tempe AZ) has [announced](#) that it will invest \$339 million to build a new facility in [Gaffney, Cherokee County SC](#) ... opening 2027, 3.7 GW capacity, [Series 6 Plus](#) bifacial, Silicon-free modules.
- [27 Countries Set 2030 Wind Energy Targets](#) - See the list, [here](#). China hasn't set a target, but leads the pack.
- [World's Largest Aircraft](#) - [Radia](#) (Boulder CO) expects the first flight of WindRunner in 2029 - longer than a football field, with a wingspan of 260 feet, 1,200 mile range, 400 mph cruising speed, able to land on 'semi-prepared' fields. The new plane is designed to take wind turbine blades directly from the manufacturing point to the installation site. Trucks, highways, bridges, railways just aren't adequate. Details and concept photos [here](#).

Other Science News -

- Drone Swarms Fried With Ten Ton Microwave Robot - at the speed of light, Mach 874,000. The 'Leonidas AR' is made by [Epirus](#) (Torrance CA). Details, a photo, and a video, [here](#).
- 8 Deadly Long Range Ukrainian Weapons - Details [here](#). Summary: Long Neptune, Flamingo, Lyuty, FP-1, Palyanitsa, Ruta, Peklo, Bars. [Photos](#).

Nice Thing - [full screen]

Cabaret - Film (1972) directed by Bob Fosse, with Lisa Minnelli and Joel Gray, set in 1931 Berlin. Based on a 1966 musical.

Willkommen, Bienvenue, Welcome - [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.