

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

### **Announcements**

**The next LABQUEST meeting will be Wednesday, April 9 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:

- Measles cases around the county
- Three drug approvals and new study for Norovirus
- High Blood Pressure (HBP) – Study pointing to one cause
- Summary Of Points From Confirmation Hearing For FDA Commissioner Designate
  - On abortion pill access
  - Vaccine advisory committee
  - [FDA staff handling drug safety for pets and livestock lost jobs in Trump firings](#)
- FDA Directed To Consider Rulemaking To Tighten Food Safety Rules
- CDC Directed To Study Relationship (if any) Between Vaccines And Autism
- X-Ray Dosage From CT Scans
- Does Daylight Saving Time (DST) Affect Health?
- Global Sea Ice At All-Time Minimum
- Second Stonehenge Discovered In Denmark

### **Science Report**

#### **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](#).

- Tick Alert - With the passing of cold weather in the DMV, [ticks and other vermin will begin to emerge](#). Ticks are more than just a nuisance, they can carry a variety of diseases - both for humans and pets. Repellents with DEET work. If you must work in or near shrubbery or tall grass, wearing light colored clothes makes ticks easier to spot.
- Measles -
  - Measles In Howard County Maryland - The Maryland Department of Health has confirmed a case of measles in an international traveler who arrived on 3/5 at Dulles Airport - no connection to the Texas outbreak. Those who were at Dulles on 3/5 or the Johns Hopkins Howard County Medical Center on 3/7, at the times and in the areas given [here](#), may have been exposed.

- Measles In Vermont - The Vermont Department of Health has [confirmed](#) a case of measles in a child returning from international travel. Anyone who was inside the Emergency Department at Copley Hospital in Morrisville VT from 3:15 pm to 6 pm on Sunday 3/9 should take precautions.
- Measles In Oklahoma - 2 cases, [here](#).
- Measles in New Mexico - 3/11 Update. Now up to 33 cases, [here](#).
- Texas Measles Update - 3/11 Update. The Texas Department of State Health Services [reports](#) a total of 223 confirmed cases since late January, with 29 hospitalized and 1 dead (>75% of the infected were under the age of 18). Only 5 of the 223 were known to have been vaccinated.
- 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 -

- Xarelto (rivaroxaban) - FDA has [approved](#) the first generics for this medication, used to reduce the risk of major cardiovascular events in adult patients with coronary artery disease. Approving safe and effective generics helps provide patients with more treatment options, and reduces cost.
- Acute Ischemic Stroke - FDA has [approved](#) TNKase (tenecteplase) for this indication.
- Macular Telangiectasia Type 2 (MacTel) - is a progressive disease of the macula (portion of the eye that processes sharp central vision). FDA has approved the cell-based gene therapy [Encelto](#) (revakinagene taroretcel-lwey) for this indication. [Neurotech Pharmaceuticals](#) (Needham Heights MA)
- Norovirus Vaccine - [Vaxart](#) (South San Francisco CA) has announced the start of Phase 1 human testing of its oral administration vaccine candidate for norovirus, sometimes called the cruise ship virus. Results are expected mid-2025. Stay tuned. [John McK.]
- High Blood Pressure (HBP) - UK National Health Service statistics indicate that [1 in 20 cases of HBP are caused by nodules that build up on the adrenal glands](#), causing the body to retain, rather than excrete, salt. This cause of HBP is called [Primary Aldosteronism](#). UK endocrinologists have developed a treatment for this condition called targeted thermal therapy (TTT), or endoscopic ultrasound-guided radiofrequency ablation - minimally invasive. Preliminary results from a small TTT study are encouraging, and a larger UK clinical trial has begun. Stay tuned.

#### Other Health Science News -

- Summary Of Points From Confirmation Hearing For FDA Commissioner Designate - See the NPR summary of five points from the Senate confirmation hearing for Dr. Marty Macary, [here](#).

- FDA Directed To Consider Rulemaking To Tighten Food Safety Rules - to eliminate a provision that allows companies to self-affirm that food ingredients are safe. [Statement](#) by the Secretary of the US Department of Health and Human Services (HHS): "For far too long, ingredient manufacturers and sponsors have exploited a loophole that has allowed new ingredients and chemicals, often with unknown safety data, to be introduced into the US food supply without notification to the FDA or the public ... ". [Details](#).
- CDC Directed To Study Relationship (if any) Between Vaccines And Autism - [details](#). Researchers have previously [published](#) several such studies, but [no evidence of a connection has been found](#). Whereas you can't prove a negative, you *can* show that a connection is **very very unlikely**.
- X-Ray Dosage From CT Scans - [has been rising](#), with doses varying by a factor of 10 or more for similar procedures. This January the Centers for Medicare and Medicaid Services (CMS) issued new mandatory reporting guidelines to improve consistency and ensure safer imaging practices. Hospitals and imaging centers will be required to collect and share more information about radiation dose by 2027 to avoid CMS penalties. The American College of Radiology has agreed to work with [Alara Imaging](#) (San Francisco CA), which is offering [free dose tracking software](#) that meets CMS reporting requirements. 93 million CT scans are done in the US annually, more than half for patients over 60. The [Leapfrog Group](#), a non-profit that rates hospital safety, has also taken an interest.
- Inflammation, A Double-Edged Sword - Local inflammation, such as the reddening around a cut, is a positive sign that the immune system is at work locally, fending off infection. System-wide inflammation, however, is the root of a number of diseases - arthritis, multiple sclerosis. Research to understand the mechanism causing systemic inflammation might lead to resolving medical issues such as antibiotic-resistant bacterial infection. [Details](#).
- Socially Distanced Chickens And Avian Flu - The price of conventionally produced (densely packed cage confinement) eggs has been rising, while the much higher price of eggs from pasture-raised chickens has held steady ... converging. Could the market [price of eggs](#) be telling us something about how to reduce the risk of avian flu in flocks of egg-laying chickens? [More natural separation?](#)
- Adult Attention-Deficit/Hyperactivity Disorder (ADHD) - See [24 personal stories](#) describing symptoms. If some of these are you, *do* check with your doctor. There are remedies.
- Does Daylight Saving Time (DST) Affect Health? - There's not much controversy among scientists studying sleep. It *does*, and it's a [negative effect](#). See a list of the 11 illnesses and social disruptions that the American Academy of Sleep Medicine correlates with the DST change, [here](#).
- Nanoplastics Found In Bottled Water - A study of three leading brands of bottled water [published](#) 1/8/2024 reported an average of [240,000 plastic fragments \(110,000–370,000\) per liter](#). About 90% of those particles were nanoplastics (particles under 1 micrometer in length). FDA does not regulate bottled water. [Warning](#).
- Health Effects Of Microplastics In Drinking Water - A new study shows some of the detailed effects, [here](#). [Publication](#)
- 71,000 Cups Of Humus Recalled Due To Plastic Fragments - details [here](#).
- 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 -

- Sources Of Non-Meat Protein - [here](#). [Barbara R.]
- The Best Chicken Broth - Twelve were tested. See the winner, [here](#).
- 5 Methods For Keeping Guacamole Green - Four of them fall on their face, but the fifth one ([water covering](#)) works for a day or two if executed carefully. Maybe add a squeeze of lemon.
- Is Coffee Healthy? - Yes, according to a registered dietician, [here](#). In addition to providing antioxidants and antiinflammatories such as polyphenols, a [recent study](#) has shown that coffee supports the growth of certain beneficial gut bacteria - assisting digestion, and boosting the immune system. A healthy gut microbiome is very important to good health, and reduces the risk of metabolic spectrum disorders (kidney, liver, colon). No coffee after mid-day, for good sleep.
- 8 Health Benefits Of Barley - and a nutritional analysis, described by a registered dietician, [here](#).
- 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 -

- Big Bear Valley Live Eagle Cam - See bald eagles Jackie and Shadow on their nest in Big Bear Valley, [here](#). Hatching complete. [full screen, Louise F.]
- Global Sea Ice At All-Time Minimum - at both poles this February. Ice reflects sunlight, and cools the Earth. Dark open water *absorbs* sunlight ... . [Details](#).
- Texas Goes Nuclear - In a 25 foot deep trench, under a new laboratory at Abilene Christian University, Abilene-based '[Natura Resources](#)' will be building a 1 MW molten salt reactor. Some names for the [new wave of reactor designs](#) on the way: new gen, next gen, small modular reactor (SMR), fast neutron. Two designs have been approved by the NRC, one being Natura's. Several others are in process - typically using molten salt or molten metal for coolant. Reactors being planned for elsewhere in TX: Dow Chemical plans to place small reactors made by [X-energy](#) at its Seadrift complex on the Gulf Coast, Natura plans to power oilfield infrastructure in the Permian Basin, and Texas A&M University announced that four companies, including Natura, would build small reactors (between 150 and 250 MW) near its campus in College Station TX. There are proposals before the TX legislature to make several billion dollars of public funds available for nuclear projects. [Mike K.]
- 6-Reactor Nuclear Plant Planned For Guangdong Province China - Two reactors are already under construction, and the third was started in February ... a [CAP1000](#) third-generation pressurized water reactor design incorporating modular construction, digital building technologies and automated welding to enhance safety and efficiency. When complete the 6-reactor complex will produce [52 billion kWh of energy annually](#), saving 15.77 million tons of coal and avoiding 42.69 million tons of CO2 emissions in the process.
- Rolls Royce Nuclear Reactors - Rolls Royce SMR has [announced](#) that the company has been selected to build SMRs (small modular reactors) in the Czech Republic, and is in competition for

SMR projects in the UK and Sweden. Rolls Royce will partner with [Siemens Energy](#) for the non-nuclear aspects of the Czech Republic project.

- [Italy Cancels 40-Year Nuclear Power Ban](#) - [Minister of Energy](#): "Italy is ready to return to nuclear power, a crucial choice that will not replace renewables, but will complement them." [Plans](#)
- [New Tesla Megafactory In Katy Texas Near Houston](#) - '[Megafactory](#)' is Tesla marketing jargon for a facility that manufactures 'Megapacks', which is Tesla jargon for storage batteries. The company will be taking over and converting a 1 million ft<sup>2</sup> warehouse for the purpose. There are similar Megafactories in Lathrop CA and Shanghai China. Each has an annual capacity of 40 GWh.

### Other Science News -

- [New High Tech Chip-Making Machines In Production At US Intel Factory](#) - [Intel](#) (Santa Clara CA) was the world's first chip foundry to receive and put to use the new Extreme Ultraviolet (EUV) lithography chip-making machines from [ASML](#) (Veldhoven Netherlands). Intel reports much [greater through-put with the new machines](#), and may use them for production of its newest chip design soon. Progress on the new Albany OH foundry [here](#). [Peter P.]
- [X-59 NASA's Quiet Supersonic Passenger Jet Prototype](#) - has recently passed its [electromagnetic interference checks](#), and is now moving on toward upcoming taxi and flight tests.
- [SpaceX Starship](#) - During its recent launch from Boca Chica Texas, the booster stage was recovered, but the Starship (upper stage) exploded shortly after separation. Details, [here](#).
- [Successful Mission For US Spaceplane](#) - The X-37B Orbital Test Vehicle-7 was [launched](#) into orbit by a SpaceX Falcon Heavy rocket from Florida on a [long-duration mission](#) for the US Space Force on 12/29/23. The uncrewed space plane has recently landed autonomously on a special 3-mile long runway at Vandenberg Space Force Base California after 434 days in High Earth Orbit (HEO, >20,000 ft), where it [tested maneuvers such as aerobraking](#). Home and safe, bird of space!
- [New Ohio Factory For Autonomous Weapons Systems](#) - [Anduril Industries](#) (Costa Mesa CA) is planning to build its first hyperscale factory [Arsenal-1](#) at a site adjacent to the Rickenbacker Airport near Columbus Ohio. The 5 million SF facility is expected to produce tens of thousands of military systems annually. Other Anduril facilities are a solid rocket motor factory in Mississippi, and a robotic submarine facility in Rhode Island. The [UK government has announced](#) that Anduril UK will provide Ukraine with the company's Altius 600m and Altius 700m drones (loitering munitions).
- [Fall Of The Roman Empire](#) - Not so fast. That timeline has now been rewritten by an archeological excavation, now in its 13th year at a site on the [River Liri](#) (tributary of the Garigliano River) Southeast of Rome. Magnetic detection, and ground penetrating radar, techniques were used to survey about 60 acres of apparently empty fields, allowing archeologists to reconstruct the elements of the thriving river-port town of *Interamna Lirenas*. Roman towns like this one were apparently thriving well into the 3rd century. [Details](#).
- [Second Stonehenge Discovered In Denmark](#) - Aars, North Jutland. Some are calling it 'Woodhenge' because it was constructed in a similar oval pattern, but using 46 wooden pilings rather than stone. See a virtual reconstruction [here](#). It is believed to have been constructed between 2,600 and 1,600 BCE.

### Nice Thing - Revolutionary Patriotic Themes

- [Do You Hear The People Sing](#) - sung by 17 Jean Valjeans from around the world - [here](#).

- 1812 Overture - Tchaikovsky - Commemorating the key battle of the Napoleonic Wars when 70,000 troops died at the Battle of Borodino as Napoleon's army attacked the Russian Imperial Army near Moscow - Performed by a flash mob of young musicians - [here](#).
- 1812 Overture - Tchaikovsky - Full orchestra with special effects - [here](#).
- The Star Spangled Banner - Francis Scott Key - explained in historical context, and then sung - [here](#). An interesting story about the origin of the national anthem. Key's choice of words is very appropriate.