

Coronavirus

CDC approval awaited

FDA panel to consider Moderna, J&J boosters

WASHINGTON, Oct 13, (AP): With many Americans who got Pfizer vaccinations already rolling up their sleeves for a booster shot, millions of others who received the Moderna or Johnson & Johnson vaccine wait anxiously to learn when it's their turn.

Federal regulators begin tackling that question this week. On Thursday and Friday, the Food and Drug Administration convenes its independent advisers for the first stage in the process of deciding whether extra doses of the two vaccines should be dispensed and, if so, who should get them and when. The final go-ahead is not expected for at least another week.

After the FDA advisers give their recommendation, the agency itself will make a decision on whether to authorize boosters. Then next week, a panel convened by the Centers for Disease Control and Prevention will offer more specifics on who should get them. Its decision is subject to approval by the CDC director.



Walensky

The process is meant to bolster public confidence in the vaccines. But it has already led to conflicts among experts and agencies — and documents the FDA released Tuesday suggest this week's decisions will be equally difficult.

In one earlier vaccine dispute, the CDC's advisory panel last month backed Pfizer boosters at the six-month point for older Americans, nursing home residents and people with underlying health problems. But CDC

Director **Dr. Rochelle Walensky** overruled her advisers and decided boosters should also be offered to those with high-risk jobs such as teachers and health care workers, adding tens of millions more Americans to the list.

Some health experts fear the back-and-forth deliberations are muddling the public effort to persuade the unvaccinated to get their first shots. They worry that the talk of boosters will lead people to wrongly doubt the effectiveness of the vaccines in the first place.

Review

When the FDA's panel meets to review the Moderna and J&J vaccines, experts will discuss whether a third Moderna shot should contain just half the original dose and what's the best timing for a second shot of the single-dose J&J vaccine.

The panel will also look into the safety and effectiveness of mixing-and-matching different brands of vaccine, something regulators have not endorsed so far.

An estimated 103 million Americans are fully vaccinated with Pfizer's formula, 69 million with Moderna's and 15 million with J&J's, according to the CDC. Regulators took up the question of Pfizer boosters first because the company submitted its data ahead of the other vaccine makers.

Tim Anderson, a US history teacher at a high school outside Louisville, Kentucky, already had his two Moderna shots months before he came down with COVID-19 in August. While his symptoms hit him "like a sledgehammer," he is convinced that the inoculation saved him and his girlfriend from the more severe effects of the disease.

The two are now awaiting clearance of a Moderna booster shot.

"Until we can build up enough immunity within our own self and, you know, as a group of humans, I'm willing to do what I need to do," Anderson, 58, said.

The FDA meetings come as US vaccinations have climbed back above 1 million per day on average, an increase of more than 50% over the past two weeks. The rise has been driven mainly by Pfizer boosters and employer vaccine mandates.

While the FDA and CDC so far have endorsed Pfizer boosters for specific groups only, Biden administration officials, including Dr. Anthony Fauci, have suggested that extra shots will eventually be recommended for most Americans.

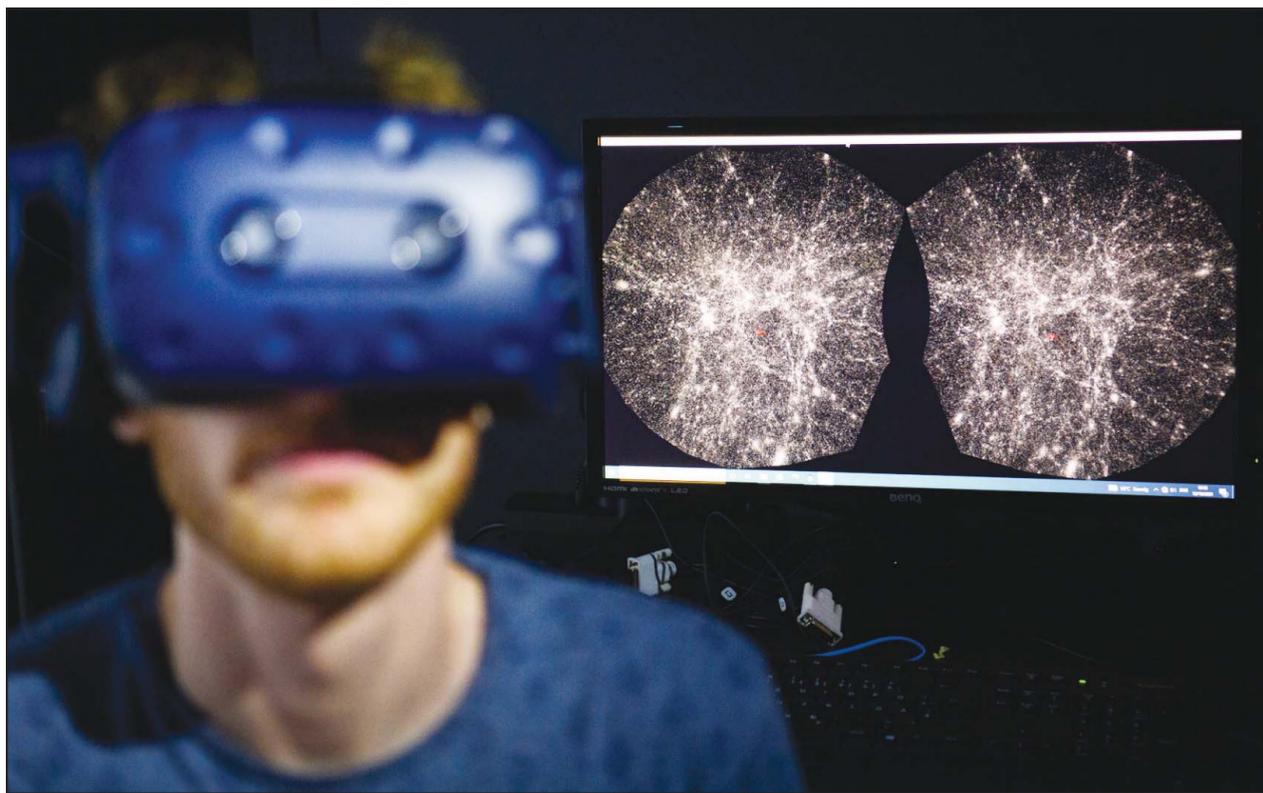
In a new review of Moderna's data, the FDA did not indicate Tuesday if it was leaning toward clearing the company's booster. It said vaccines used in the US still provide protection, and it raised questions about some of Moderna's data.

The two initial Moderna shots contain 100 micrograms of vaccine each. But the drugmaker says 50 micrograms ought to be enough for a booster for healthy people.

A company study of 344 people gave them a 50-microgram shot six months after their second dose, and levels of virus-fighting antibodies jumped. Moderna said the booster even triggered a 42-fold rise in antibodies able to target the extra-contagious delta variant.

Side effects were similar to the fevers and aches that Moderna recipients commonly experience after their second regular shot, the company said.

As for people who got the J&J vaccine, the company submitted data to the FDA for different options: a booster shot at two months or at six months. The company said in its FDA submission that a six-month booster is recommended but that a second dose could be given at two months in some situations.



Hadrien Gurnel, software engineer EPFL's Laboratory for Experimental Museology (eM+) explores with a virtual reality helmet the most detailed 3D map of the universe with the virtual reality software VIRUP, Virtual Reality Universe Project developed by Swiss Federal Institute of Technology (EPFL) scientists of the Laboratory of Astrophysics (LASTRO) at EPFL's Laboratory for Experimental Museology (eM+), in St-Sulpice near Lausanne, Switzerland, Tuesday, Oct. 12. (AP)

Technology

Big picture, big data

Swiss unveil VR software of universe

LAUSANNE, Switzerland, Oct 13, (AP): The final frontier has rarely seemed closer than this - at least virtually.

Researchers at one of Switzerland's top universities are releasing open-source beta software on Tuesday that allows for virtual visits through the cosmos including up to the International Space Station, past the Moon, Saturn or exoplanets, over galaxies and well beyond.

The program - called Virtual Reality Universe Project, or VIRUP - pulls together what the researchers call the largest data set of the universe to create three-dimensional, panoramic visualizations of space.

Software engineers, astrophysicists and experimental museology experts at the Ecole Polytechnique Federale de Lausanne, or EPFL, have come together to concoct the virtual map that can be viewed through individual VR gear, immersion systems like panoramic cinema with 3D glasses, planetarium-like dome screens, or just on a PC for two-dimensional viewing.

"The novelty of this project was putting all the data set available into one framework, when you can see the universe at different scales - nearby us, around the Earth, around the solar system, at the Milky Way level, to see

through the universe and time up to the beginning - what we call the Big Bang," said Jean-Paul Kneib, director of EPFL's astrophysics lab.

Think a sort of Google Earth - but for the universe. Computer algorithms churn up terabytes of data and produce images that can appear as close as one meter (about three feet), or almost infinitely far away - as if you sit back and look at the entire observable universe.

VIRUP is accessible to everyone for free - though it does require at least a computer and is best visualized with VR equipment or 3D capabilities. It aims to draw in a broad array of visitors, both scientists looking to visualize the data they continue to collect and a broad public seeking to explore the heavens virtually.

Still a work in progress, for now, the beta version can't be run on a Mac computer. Downloading the software and content might seem onerous for the least-skilled computer users, and space - on a computer - will count. The broader-public version of the content is a reduced-size version that can be quantified in gigabytes, a sort of best-of highlights. Astronomy buffs with more PC memory might choose to download more.

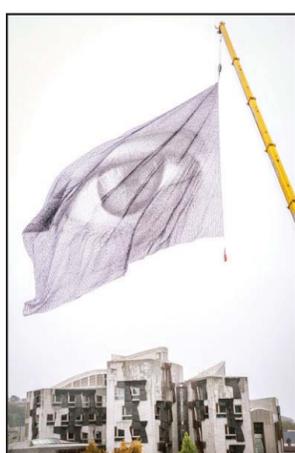
The project assembles information from eight databases that count at least

4,500 known exoplanets, tens of millions of galaxies, hundreds of millions of space objects in all, and more than 1.5 billion light sources from the Milky Way alone. But when it comes to potential data, the sky is literally the limit: Future databases could include asteroids in our solar system or objects like nebulae and pulsars farther into the galaxy.

To be sure, VR games and representations already exist: Cosmos-gazing apps on tablets allow for mapping of the night sky, with zoom-in close-ups of heavenly bodies; software like SpaceEngine from Russia offers universe visuals; NASA has done some smaller VR scopes of space.

But the EPFL team says VIRUP goes much farther and wider: Data pulled from sources like the Sloan Digital Sky Survey in the United States, and European Space Agency's Gaia mission to map the Milky Way and its Planck mission to observe the first light of the universe, all brought together in a one-stop-shop for the most extensive data sets yet around.

And there's more to come: when the 14-country telescope project known as the Square Kilometer Array starts pulling down information, the data could be counted in the petabytes - that's 1,000 terabytes or 1 million gigabytes.



The aerial climate installation by Swiss artist Dan Acher 'We Are Watching' is unveiled at Our Dynamic Earth in Edinburgh, Scotland, Tuesday, Oct. 12. The global flag, which is the size of a 10-story building and features an eye made up of thousands of portraits, is visiting Scotland for the first time ahead of COP26 next month. (AP)

Discovery

**'Funding key to success':** The British official who will preside over an upcoming UN climate summit said Tuesday that he's losing sleep over how to get long-promised funding for poorer nations to switch to cleaner energy and cope with the worst impacts of climate change.

**Alok Sharma**, president of the 26th United Nations Climate Change Conference, used a speech in Paris to jolt richer nations into action in the last weeks before the Oct 31-Nov. 12 event in Glasgow, Scotland.

Sharma said that securing the previously promised annual package of climate change funding for poorer nations "is vital to the success of the summit."

"Without finance, tackling climate change is well-nigh impossible. So developed countries must deliver on the \$100

billion a year promised to developing nations. (AP)

**'Cuts in Baltic catches of cod':** The European Union imposed cuts in catches of cod and herring in the Baltic Sea on Tuesday, to make sure both threatened stock and the region's fishing fleet have a chance of survival.

The sea off several of the EU's northern member states has been suffering



Sinkevicius



Sharma

from pollution, high water temperatures and too many vessels chasing too few fish over the past years, pushing EU ministers to impose some tougher measures.

"The decisions reached are difficult, but necessary, so that the Baltic Sea can remain the source of livelihood," said EU Commissioner **Virginijus Sinkevicius**.

Although some environmental groups applauded the measures, Andrea Ripol of Seas At Risk said it "may come too late." (AP)

World-leading experts offer advice this Cybersecurity Awareness Month to become safer online at home with lessons learned at work

SANS INSTITUTE INTRODUCES #SECURETHEFAMILY CAMPAIGN TO HELP PROTECT FAMILIES ONLINE

**This October, for Cybersecurity Awareness Month, SANS Institute (SANS) is encouraging everyone to spread security awareness programs beyond the boundaries of the office and to help all employees and co-workers apply the lessons learned at work to protect their families and friends with the global #SecureTheFamily initiative.**

Today, we are more digitally connected than ever before, as more people work from home, remote e-learning has grown exponentially, and Wi-Fi-enabled "smart" devices increasingly occupy different aspects of our daily lives. Connected personal assistant devices can control your smart home devices, digital refrigerators can track your food inventory, video monitors allow you to keep an eye on your little one anywhere from your smartphone, thermostats and light bulbs can connect to your home Wi-Fi, and some washing machines let you remotely schedule wash cycles in advance. Our children are super savvy about the latest model of mobile phone, while our aging parents need help with theirs. All of this connectivity brings plenty of benefits and convenience, but each connected device also brings increased risk.

"Every personal device used is a potential

entry for system threats," says Heather Mahalik, Digital Forensics Expert, SANS Faculty Fellow, Cellerite Senior Director of Digital Intelligence, and mother of two. "Cyber attackers can target anyone's home - no one is invulnerable," she says. "Risks to our digital safety are everywhere, but there are steps you can take to protect yourself and your family. Ms. Mahalik developed the SANS Security Awareness curriculum for #SecureTheFamily with practical advice on securing personal devices and data and how to keep families safe online.

Ms. Mahalik notes a few misconceptions about individual-based security practices, such as your home network is too small to be at risk of a cyberattack and that your smart devices are secure right out of the box. So how do we secure our homes, and more importantly, protect our families? Ms. Mahalik highlights some key issues:

**1. Backing Up Your Digital Information**

Most of us know that we need to back up our data, but how often do we do it? And are we sure we know where it's going? Our data security depends on good habits such as strong organization of our passwords and consistent backups. Separate your work from personal items from family storage plans so that sensitive items are not shared



Heather Mahalik

with those who don't need access to them.

**2. Protecting Your WiFi Network**

Another crucial step is to secure your home WiFi network. Make sure you change the network's name first - don't leave it as "Admin" or use your last name. Also, change the network password to a word or phrase that your family will remember, but outsiders won't easily guess.

**3. Balancing Your Children's Privacy**

When they log onto their devices, our

children and teens face numerous risks, including cyberbullying and potential exposure to online predators through social media and video gaming. In fact, research shows that 40% of kids in grades 4-8 report they have connected or chatted online with a stranger, 51% of all teens use at least one social networking app regularly, and 90% of teenagers have regular access to a mobile device. Tweens and teens spend so much time on their digital devices that parents can face challenges striking an appropriate balance between security and accessibility. To balance children's privacy online, parents need to monitor kids' online activities and set screen time limits.

**4. Securing Your Devices**

From very young toddlers up through high schoolers, our children are more likely than ever to be attached to one or more digital devices, which comes with considerable risk. As parents we must protect our children by securing their devices. For Android devices, set a passcode, enable FindMyDevice to locate or lock a lost device, and establish a phone number/email that can be used to validate your information. For Kindles/ eReaders, enable the lock screen by setting a passcode, enable FindMyKindle to locate or lock a lost device, and update your personal

information to include your name and email address in case the device is lost. For all iOS devices, set a passcode, enable FindMyPhone to locate or lock a lost device, establish a phone number/email that can be used to validate your iCloud information, and create backups with iCloud or iTunes.

**5. Safeguarding School-Issued Devices**

Make sure to secure school-issued Chromebooks and other devices by setting passcodes, knowing what location artifacts are being tracked, and ensuring children fully understand Internet safety. Many children and teens will try to bypass the security measures on their devices, so be vigilant against the use of jailbreaks, hacking, and other techniques that kids might use that invite additional security risks.

The #SecureTheFamily initiative will help you better educate your workforce, friends, and family with techniques to secure home devices and personal data, as well as how parents can protect their children and teens online.

"Because it's never too late to practice good cyber hygiene," reminds Ms. Mahalik.