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WEATHER

Friday: Mostly sunny. High 25, low 6. Saturday: Partly cloudy. High 21, low 11. **Sunday:** Mostly sunny. High 25, low 7. Monday: Mostly sunny. High 24, low 5. Tuesday: Partly cloudy. High 21, low 8.

Sunrise: 8:05 a.m. **Sunset:** 5:31 p.m.



In the Wednesday Express: POWER ENGINEERS

All you need is 'LUV':

New air filtration system brings technology to Ketchum before anywhere else

By ANDREW GUCKES

Express Staff Writer

uring the invention of many now-noteworthy inventions, there was "ah-ha" moment that the inventors consider to be a benchmark point in the process.

In the case of the halo air filtration system, this sensation came via an at-home experiment, said co-founder Anu Sood.

"I did an experiment with a ceiling fan in my home," he said. "I lit incense and tried different fan settings, and found that if the fan was spinning in reverse on the middle spin rate or higher, it actually drew the smoke up into the fan and then pushed it out above

The halo air filtration system, created by Sood and lifelong friend Sandy Seth's Los Angeles-based LUV Systems, works by drawing air from a contained indoor space into a large white ring that they say rids it of 99.9% of germs using UV light, before pushing clean air back out the top—just like Sood's fan experiment. It is designed to work in a room of up to 4,500 square feet.

Keen eyes or frequent coffee drinkers around Ketchum might already know how LUV systems and their invention ties into the city. Thanks to a familial connection through Seth, the first halo system in a public building in the country can be found in the Sun Valley Visitor Center in downtown Ketchum.

Seth said that this is the best type of invention: one that seems obvious in retrospect.

"It's so simple. Of course you want to lift the air up while people are breathing it, and of course you want to [draw] all of the air into a 360 degree fan. Of course you then want to disinfect that air before adding it back into the breathing zone," he said. "It's like wheels on luggage. Why were we carrying luggage for so long?"

According to a study conducted on the halo by Boston University Medical School, the low-dose of UV light administered by the device kills 99.9% of COVID-19 particles in seconds.

In a 20-by-20 room, for example, the breathing zone would be cleaned "within a minute." according to Sood.

"The part of a room below three feet from the ground, close to the floor, that's not really going to have contaminants of any concern that you're going to be breathing. And then the air above seven feet is not a place where people are breathing," he said. If only the "breathing zone" is considered in the 20-by-20 room, that amounts to 1,600 cubic feet, which the halo can clear in as little as 45 seconds.

The technology that allows for this is not necessarily revolutionary, according to Seth.

"UV light has been used to kill pathogens in the air and water for around 100 years," he said. "We're using a very



Experss photo by Willy Cook

LUV Systems' halo air filtration system at work in the Sun Valley Visitor Center in downtown Ketchum.

well-tested and well-known technology."

With the combination of the UV light, fan and the airplane-cowling-inspired design (Seth worked as an aerospace engineer on the Hubble Telescope before venturing into patent law, and now, public health), LUV Systems has found a niche. Their design is patent-pending, and Seth and Sood-as well as Wood River Valley local and LUV Systems sales representative Whit Albright—say there is nothing like it on the market.

"I was in the outdoor industry, and this is a totally different [product] than what I'm used to selling," Albright said. "I wasn't quite sure it was going to appeal to me when Sandy first said 'I want to share something with you,' but after talking to him about it briefly, I thought, 'Wow, this is quite brilliant, and I'm fascinated and I want to hear more."

Albright was the one who introduced Seth and Sood to Ketchum Mayor Neil Bradshaw, who then made the call to place a unit in the cityowned Visitors Center. Starbucks owner George Rizzo also consented to its placement, although he declined to be interviewed for this story. While LUV is "not in the business of giving units away," according to Seth, the company decided this would be a worthwhile move for public recognition of the product. With a price tag of \$25,000, Bradshaw was more than happy to receive the unit for free.

"The city likes to partner with innovative companies if there is a public benefit," he said. "The halo air filtration demonstration project is an opportunity to provide improved air quality in a public space with no cost to our taxpayers."

Two other units have been placed since then, in addition to the first unit at LUV Systems headquarters and the one in Ketchum. One is at the headquarters of Los Angelesbased charity Homeboy Industries, and another is in the Saint Reed Missionary Baptist Church in Los Angeles. Pastor C.R. Jones of Saint Reed said that his congregation has been more than happy to trade in masks for the halo system.

"It gives us comfort knowing that we have this device that is there to protect us from what I call, 'the forever virus,'" he said. "I have spoken with the current state president of the churches association to have some pastors come over and take a look at the halo."

Since its placement in December, Jones has been advocating for the device far and wide.

"We'll never go back to pre-pandemic normal, but I believe this is a great step towards reaching some normality post-pandemic."

Pastor C.R. Jones Saint Reed Missionary Baptist Church

Seth said that church services are actually at the lower end of what the device is capable of protecting. The goal from the outset was to create a system that could provide safety for at least one full shift of work at a place like Starbucks, which typically lasts eight hours. The Boston University study found that the device is effective for up to 10 hours before enough COVID particles can congregate to make the average person sick.

"The whole point of it is we want the halos to be doing the work," Seth said. "You don't have to be wearing masks anymore. Nobody wants to wear masks."

The goal, according to Sood, is to eventually have halo's in all sorts of high risk environments, like airport terminals, hospital cafeterias and nursing homes. As of now, 20 halos have been produced, the vast majority sitting in storage waiting to be sold. Sood hopes

that soon, the company will be producing at a higher volume, allowing sale price to go down.

"We've already identified ways to reduce the cost by about 35-40%," Sood said.

The relative simplicity of the system allows for this. It doesn't conflict with existing HVAC systems, only requires one bulb change a year and costs about \$3 a day in electricity. Right now, LUV Systems is only selling commercially, but plans are in the works for different sizes of the halo that could accommodate smaller, residential spaces.

The first round of financing was provided almost entirely by Sood and his wife, although the co-inventors said that they are "working on our next round of investment," and hope to get the cost down to \$5,000 per unit.

The operation is still very much in house, as Sood said that he and Seth are the only true full time employees of LUV Systems. Danish S. Khatri serves as VP of Engineering, and there are three or four other people who are either part time or on call. For installations, they contract out.

The LUV Systems office is pretty nondescript, other than the MIT Flag that hangs on the wall and glant white circle that hangs from the ceiling, emitting a constant blue light. For Seth, the device sometimes does a pretty good job of blending into the room. The blue light is even relaxing, he said.

Pastor Jones said that he has also had plenty of people not notice the device until it was pointed out to them, although by this point the whole congregation knows exactly what it is.

"My responsibility is to protect the people, and look out for their spiritual and physical well being, and, with that in mind, I think the halo is literally a Godsend," he said. "We'll never go back to pre-pandemic normal, but I believe this is a great step towards reaching some normality post-pandemic."

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