



## Houston gets nation's first 'super WiFi' hot spot: Pecan Park

Houston leads way in launching 'super WiFi'  
1st hot spot in U.S. opens Web to disadvantaged

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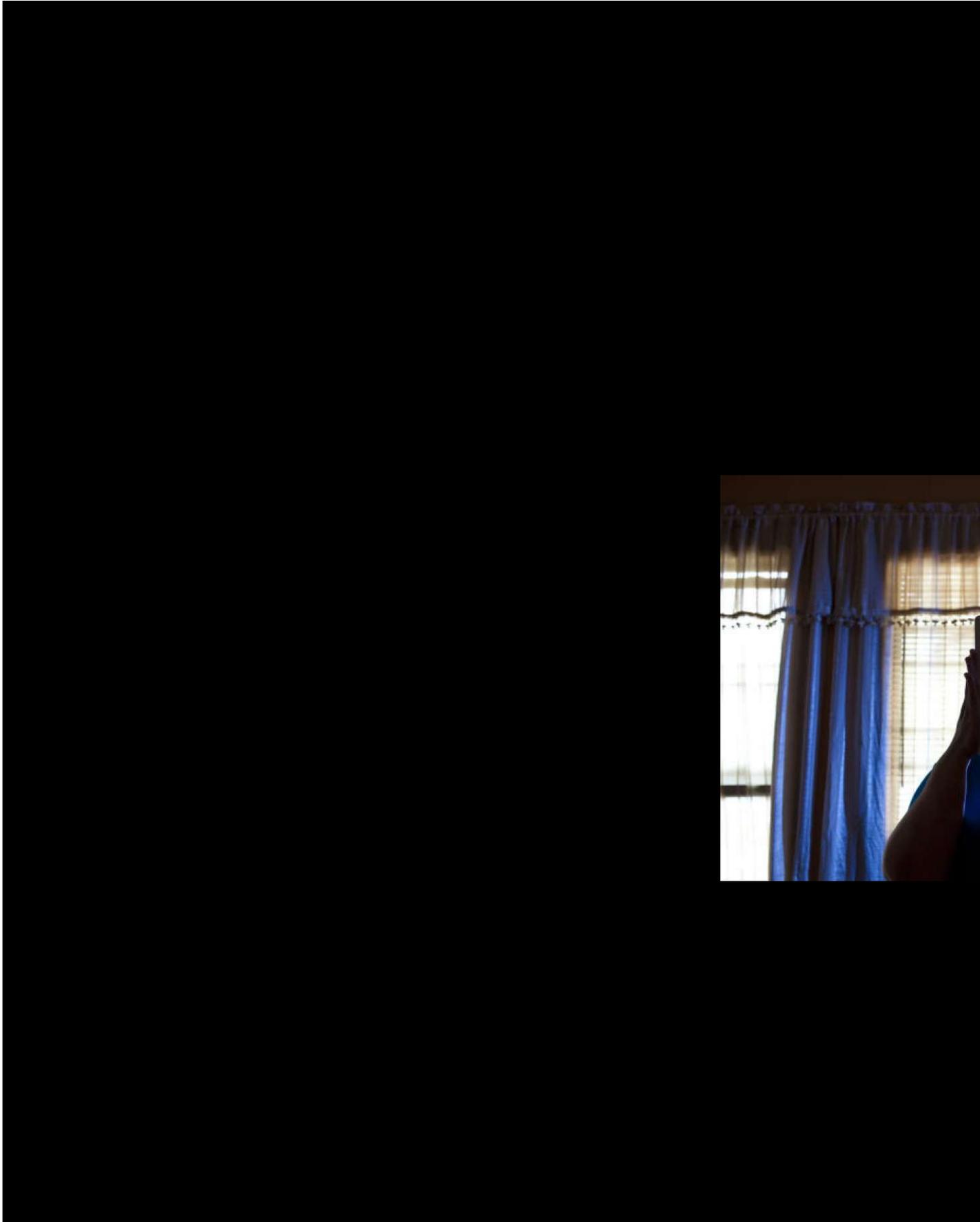




Photo: Eric Kayne, For The Chronicle

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Leticia Aguirre of east Houston may be the first person in America to connect to the Internet by "super Wi-Fi," thanks to a partnership between Rice University and Technology For All.

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**Leticia Aguirre** seems an unlikely candidate for the vanguard of wireless Internet technology.

But that's just where the Houston grandmother finds herself today, as quite possibly the nation's first user of "super WiFi" technology at her east Houston home.

"To me the Internet is like a window to travel to places I don't think I'll ever be able to get to," said Aguirre, 48, who works at a nearby restaurant.

She's an early adopter of super WiFi because of a partnership between **Rice University**, which provided the technology, and Technology For All, a Houston nonprofit that provides free wireless Internet access.

As its name suggests, super WiFi has created a buzz in the technology community, with providers scrambling to determine how best to use the valuable new WiFi spectrum.

With money from the **National Science Foundation**, **Edward Knightly**, a computer engineer at Rice, was able to build prototype equipment this winter and create Houston's first super WiFi hot spot a few weeks ago.

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"This is an early trial," he said. "We're still trying to determine the ideal use for the technology."

#### Space on spectrum

Super WiFi was made possible in September when the **Federal Communications Commission** issued rules for the use of spare patches of the radio spectrum that opened up when broadcast TV stations sv

Normal WiFi signals use a portion of the spectrum in which wavelengths are much shorter, and therefore not good at penetrating through trees or walls.

The newer chunk of the spectrum allowed WiFi signals at longer wavelengths, which are much better at penetrating natural and man-made barriers.

In Aguirre's Pecan Park neighborhood there are a lot of, well, pecan trees.

"I think the biggest opportunity is the extended range and the penetration through trees and buildings," Knightly said. "It can provide the in-home service that WiFi never could."

Aguirre has tried to use Technology For All's equipment for several years, but could never get a reliable signal.

"I had told them the antenna was not helping, so maybe they should come and take it down," Aguirre said. "It worked, but the Internet was very, very slow. To go to a page it took an hour or longer. Who wants

Aguirre said she uses the Web to view her paychecks, conduct online banking and watch movies. Her 5-year-old grandson likes to play games.

Traditional WiFi signals travel about 100 yards before petering out.

The new space in the spectrum can produce signals that travel up to a mile, and penetrate into homes.

#### A benefit to rural areas

But there are drawbacks as well. The amount of spectrum available between digital TV stations is smaller than the segment reserved for traditional WiFi, so there's limited bandwidth, especially in urban area

That's why Knightly and others believe the technology may see its widest applicability in rural areas.

**Will Reed**, president of Technology For All, said he's working with about 70 public computer sites in Texas to eventually distribute the technology, including rural areas such as Duval County in South Texas.

"It's a huge opportunity," Reed said. "You can really blast the signals a long way. I think it will work really well in rural populations where it would be very expensive to run wires to."

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