

## Rice research featured during White House announcement of new wireless initiative

B.J. ALMOND – JULY 15, 2016  
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A video showing how Rice University researchers have improved and expanded wireless technology was featured during the July 15 [White House announcement](#) of a \$400 million Advanced Wireless Research Initiative led by the National Science Foundation.

Edward Knightly, professor and department chair of electrical and computer engineering and director of the Rice Wireless Network Group, appears in the video and attended the White House ceremony in Washington, D.C.



The initiative is intended to maintain U.S. leadership in the development of wireless technology and produce the next generation of mobile technology. This new program will enable the deployment and use of city-scale testing platforms for advanced wireless research over the next decade. These platforms and the fundamental research supported on them will allow academics, entrepreneurs and the wireless industry to test and develop advanced wireless technology ideas, some of which may translate into key future innovations for fifth-generation systems and more. These efforts are expected to accelerate the deployment of ultralow latency and high-capacity wireless networks that are up to 100 times faster than those currently available.

"The Advanced Wireless Research Initiative will amplify and accelerate U.S. leadership in wireless research," Knightly said. "The initiative enables an unprecedented mix of urban-scale research platforms and fundamental research."

Knightly and his collaborators have been heavily involved in research on wireless technology, which prompted NSF to ask Knightly to provide a video about his work for the White House announcement.

Among the accomplishments of Knightly's research group:

- \* The Rice researchers won a \$2.4 million [NSF grant](#) to conduct the most extensive experimental study of wireless technology that uses 100 or more antennas per base station to send tightly focused beams of data to each user, even as they move. A photo of Rice's Argos Network for this project appears on the [NSF website](#) announcing the new White House initiative. Lin Zhong, professor of electrical and computer engineering and of computer science at Rice, is the principal investigator for the NSF grant.
- \* They found a way to make the most of [the unused UHF TV spectrum](#) by serving up fat streams of data over wireless hotspots that could stretch for miles.
- \* They demonstrated the first system that allows [wireless data transmissions over UHF channels](#) during active TV broadcasts, which has the potential to significantly expand the reach of so-called "super Wi-Fi" networks in urban areas.
- \* They teamed up with nonprofit organization Technology For All to launch [a free community broadband Wi-Fi network](#) in the East Houston neighborhood of Pecan Park in 2004. That network, TFA-Wireless, now serves a 3-square-mile area.

The video shown during the White House announcement is available [here](#).






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**About B.J. Almond**

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