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TTU Electrical Engineering Team Takes Top Honors in DARPA Spectrum Challenge

A Tennessee Tech University professor and student teamed up to create the winning system in DARPA's Spectrum Challenge over teams including Vanderbilt University, Georgia Tech and Virginia Tech.

TTU electrical engineering professor Adam Anderson and student Brett Witherspoon developed a radio system that made the best use of the broadcast spectrum by automatically seeking wavelengths that aren't cluttered with radio traffic. These software-enabled radios can also adjust output power and transmission parameters and keep track of spectrum use by nearby devices to optimize their performance.

"My favorite part about being a professor is research," said Anderson. "It's a lot of hard work and collaboration and team effort, but the payoffs can be tremendous. The potential is there for this to become huge commercially or to enable the military or emergency responders to communicate much more easily in the field. Really, the implications of this could be huge once it makes it to market phase and the price comes down."

DARPA was a pioneer in software defined radio projects in their efforts to develop a system where all their own radios could communicate with each other inside the agency.

Their first-place standing earned them a check for \$50,000. Last fall, the pair earned a second-place slot in the wildcard section of the tournament; the win brought them \$5,000 for travel expenses and another \$5,000 for new radio gear in the lab.

"In addition to being a major achievement for TTU, Anderson's and Witherspoon's accomplishments at the DARPA Challenge call to mind the attributes of a Renaissance Engineer, which has become our signature graduate," TTU College of Engineering Dean Joseph Rencis said.

"We focus on the student and faculty member relationships that produce an adaptive professional who is inquisitive and creative and makes significant contributions for the betterment of humanity," Rencis said.

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