OSU will receive more than $500,000 over a three-year period for Thomas to research ways to improve the survivability, security and reliability of military sensors.

The Smallest Line of **Defense**

A military device no larger than a pencil eraser will be the focus of Oklahoma State University-Tulsa assistant professor Johnson Thomas' research for the next three years.

Thomas is one of 27 academic researchers in the country who recently received grants from the United States Department of Defense Experimental Program to Stimulate Competitive Research (DEPSCoR) to perform research in science and engineering fields important to national defense.

This year, 22 states competed for about $11.5 million in funding through the program. OSU will receive more than $500,000 over a three-year period for Thomas to research ways to improve the survivability, security and reliability of military sensors.

Thomas said sensors are often deployed in enemy territory to collect observational data on the environment, detect chemical agents or track the movement of troops. The information is then relayed to military personnel stationed in a safer area.

"Currently, the sensors are problematic because they are very fragile with limited power, memory and battery life, and they are vulnerable to enemy intrusion," Thomas said. "We're working to make the sensors more resilient to enemy attacks so that, if they are captured, we can detect intruders and determine if the sensors have been tampered with and contain false information."

Thomas said similar sensors are used in everyday applications where information needs to be gathered, such as on bridges or nuclear power plants. However, Thomas' research will focus specifically on military applications.

"The implications for this project are tremendous," said OSU-Tulsa President Gary Trennepohl. "Dr. Thomas has a unique opportunity with this grant to develop new technologies that could prove beneficial to our military and the Department of Homeland Security."

Thomas is working on the project with Le Gruenwald from the University of Oklahoma, Sandip Sen from the University of Tulsa and Pierre Tiako from Langston University.

Thomas said representatives from the Department of Defense (DoD) will occasionally visit campus to monitor the group's progress. When the research is complete, the group will present their findings to DoD officials.

"After the demonstration, three things could happen," Thomas said. "They could extend our funding for additional research, put our sensors into production or recommend us to Homeland Security to see how they could put our research to use."

DEPSCoR is designed to expand research opportunities in states that have traditionally received the least funding in federal support for university research. The Air Force Office of Scientific Research, the Army Research Office and the Office of Naval Research solicited proposals for review. In response, 22 state proposal packages consisting of 108 projects were submitted, requesting more than $56.4 million. Only 27 projects from 20 institutions were selected to receive funding.

Trish McBeath

VANGUARD