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# Engineering Leader

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# University of Dayton, Ohio (url: <http://www.udayton.edu/index.php>)



## Engineering Leader

06.20.2012 | Engineering, Faculty, Research

The University of Dayton School of Engineering is among an elite group of universities securing federal Multidisciplinary University Research Initiative (MURI) funds, joining six Ivy League schools, MIT and New York University in the latest round of awards.

The University will lead the three-year, \$4.5-million project, which can be extended for two years and includes the Air Force Institute of Technology, Michigan Technological University, North Carolina State University, New Mexico State University and the University of Miami.

The University has long had a prominent engineering research portfolio, ranking 23rd nationally in sponsored engineering research and development. But the Air Force Office of Scientific Research MURI contract is significant. The School of Engineering leads a project in a MURI program that mainly features elite engineering programs, according to Mikhail Vorontsov, professor and Wright Brothers endowed chair in the University of Dayton School of Engineering, principal investigator on the MURI project.

"It also is great for Dayton because much of the funds — 64 percent — and research will be at the University of Dayton and AFIT," Vorontsov said. "We will really collaborate with AFIT. This is a good example of how local universities do not compete for funding but how they work together for funding.

"We appreciate the Air Force Office of Scientific Research and program manager Dr. Kent Miller for selecting our proposal."

Vorontsov added the funding is likely to allow his Intelligent Optics Laboratory to add high-tech jobs in the Dayton area.

The group will study how atmospheric conditions affect performance of various optical systems operating over long distances, around 200 miles and sometimes farther. Vorontsov's group has studied laser beam propagation over 4.2 miles between the University's College Park Center and the Dayton VA Medical Center and over 92 miles between two Hawaiian islands.

Lasers can be used to transmit all sorts of data including high-definition images.

"We will look at how the curvature of the Earth, clouds and other atmospheric conditions cause the degradation or loss of data, why and how often. Then, we'll try to find ways to mitigate those effects and build better optical systems including laser communications, lidars (radar using laser beams), imaging and laser beam projection," Vorontsov said.

For more information on the University of Dayton Ladar and Optical Communications Institute, click on the related link.

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