

6-21-2007

Campus Report June 21, 2007

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Recommended Citation

"Campus Report June 21, 2007" (2007). *News Releases*. 2107.
https://ecommons.udayton.edu/news_rls/2107

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06.21.2007 | Research, Engineering, Science, Campus and Community

Raytheon and the University of Dayton share a vision: the development of laser radar (ladar) technology that could eliminate terrorist hiding spots, aid search and rescue during disasters and keep the brightest technological minds in Ohio.

That's why Raytheon is supporting the UD Ladar and Optical Communications Institute (LOCI) as the first corporate partner. Nick Uros, Raytheon vice president of advanced concepts and technology, also agreed to lead the institute's board of governors, which oversees LOCI operations and guides strategic planning.

Lockheed-Martin and Textron Systems Corp. also have joined with Raytheon to support LOCI as founding corporate members.

Ladar, or laser detection and ranging, is similar to radar, except it typically uses infrared lasers rather than radio waves to detect targets.

Uros said UD's focus on laser applications and work with the U.S. Air Force are other reasons for this partnership. He sees the partnership as a way to keep the brightest technical minds in the U.S. and to excite students on all levels about math and science.

UD, the U.S. Air Force and regional businesses launched the \$3.2 million institute last October to consolidate the brain power of the region's ladar researchers to put ladar on a faster track to the battlefield and business. LOCI is based in UD's College Park Center.

Ladar's clearer images can eliminate multiple reflections from buildings in cities, tree canopies and other camouflage, which provide potential terrorist hiding places, according to Joe Haus, LOCI director and chair of UD's graduate electro-optics program. He added that ladar also could alert drivers to obstacles and aid in land development and searches after disasters.

Twenty-two instructors from UD and the Air Force Institute of Technology will teach in what is believed to be the nation's first laser radar curriculum. The students, many of whom will be enrolled in UD's School of Engineering, will have opportunities to perform research on campus and at Wright-Patterson Air Force Base with government researchers.

"We fundamentally see this as an opportunity to set up an educational environment to develop the next generation laser radar engineers," said Barry Alexia, Raytheon director of advanced concepts and technology. "The Air Force Institute of Technology (AFIT), the LOCI and the Air Force Research Lab (AFRL) in Dayton create a three-prong focus for this type of technology. Ultimately, we are creating experts — homegrown experts."

Haus said partnering with the companies also gives UD a pathway for commercializing emerging technologies.

Along with Raytheon, Lockheed-Martin, Textron, the Air Force Research Lab, Air Force Institute of Technology and UD will have representatives on LOCI's board.