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Laser-Guided Economy

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

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The technical director of the University of Dayton Ladar and Optical Communications Institute (LOCI) is helping lead national efforts to make the optics and photonics industry a focal point in boosting the U.S. economy and making revolutionary technical discoveries.

Paul McManamon was a co-chair of the National Research Council's Committee on Harnessing Light: Capitalizing on Optical Science Trends and Challenges for Future Research. His role took him to Washington, D.C., in September where he presented the group's findings to the White House Office of Science and Technology Policy. U.S. energy Secretary Steven Chu and former Intel CEO Craig Barrett also presented in support of the study results, highlighting the significant impact optics and photonics have on the nation's high-tech economy.

McManamon will continue to work with the Office of Science and Technology Policy as it relates to the study results. He will present the study results to National Science Foundation leaders later this month.

Optics and photonics touch nearly every aspect of our daily lives — communications, information processing and data storage; security; energy; health and medicine; manufacturing; advanced photonic measurements and applications; strategic materials for optics; and displays.

"As examples, a typical Google data center has more than a million lasers in it. And, the first thing medics do when they arrive is measure your blood-oxygen content using an optical sensor that sends red light through your finger," McManamon said.

The study recommended the federal government develop a national initiative to bring academia, industry and government together for optics and photonics research opportunities. A draft of the committee's full report is available through the related link.

"The impact of optics and photonics on U.S. technology leadership is substantial; this is a critical reason to support a National Photonics Initiative," McManamon said in a National Research Council news release. "Optics and photonics facilitates many technology areas and is therefore critical to U.S. high-tech competitiveness. A National Photonics Initiative will ensure that we make full use of these technologies."

In addition to working on the study with the National Research Council, McManamon also recently was vice chair of a National Academy of Sciences study and a member of an Air Force board study on intelligence, surveillance and reconnaissance.

McManamon, who also works as a consultant at Exciting Technology, was the chief scientist in the Air Force Research Laboratory sensor directorate before coming to the University of Dayton. He served as the president of SPIE, the international society for optics and photonics, in 2006.

The University of Dayton has one of just seven electro-optics programs in the United States. In 2007, the University worked with the U.S. Air Force and regional businesses to launch the Ladar and Optical Communications Institute on campus and what is believed to be the nation's first laser radar curriculum. Since then, the electro-optics program has helped create more than 30 jobs through three Ohio startups and two companies that relocated part of their operations to Ohio.

For more information, contact Shawn Robinson, associate director of media relations, at 937-229-3391 or srobinson@udayton.edu.