



# *Distinguished* LECTURE SERIES

## Making Light Work of Warfighter Performance



Presented by:

### Professor Mark S. Rea

PROFESSOR OF ARCHITECTURE AND  
COGNITIVE SCIENCES

Lighting Research Center (LRC) at Rensselaer Polytechnic Institute



**AUGUST  
22  
11 a.m.**

In the Junker Center

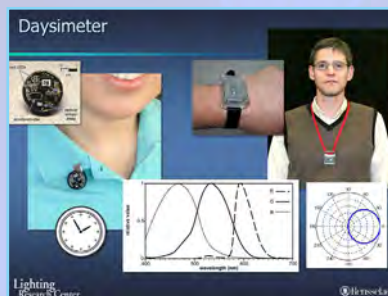
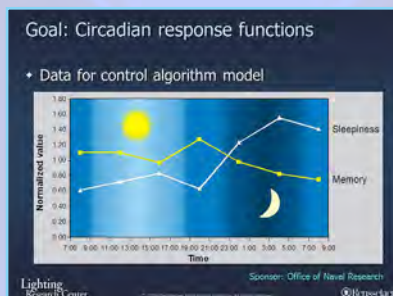


**Office of Naval Research**  
875 N. Randolph St., Arlington, Virginia  
Bobby Junker Executive Conference Center, 14th Floor

# Making Light Work of Warfighter Performance

The majority of information we gain about our environment is through the eyes. Nearly 80 percent of our sensing cortex is devoted to vision, and our physiology is coupled to the local 24-hour light-dark cycle incident on our retinæ. Since its inception, the Lighting Research Center at Rensselaer Polytechnic Institute has been devoted to promoting the effective use of light for society and the environment. A large number of research studies can be characterized as translating neuroscience into applications, many with direct relevance to warfighter performance. We have

helped implement new duty schedules and lighting systems on submarines, improved performance of airfield landing lights, developed methods for enhancing the performance of warfighters at night, and developed potential early warning systems for naval aviators becoming hypoxic. These successful projects have relied upon a basic understanding of retinal neuroscience and a practical knowledge of lighting system performance. A sampling of past and present lighting projects relevant to warfighter performance will be offered.



## ABOUT Professor Mark S. Rea

Mark S. Rea, Ph.D., is professor of Architecture and Cognitive Sciences at the Lighting Research Center (LRC) at Rensselaer Polytechnic Institute. He served as LRC director from 1988 to 2017. Dr. Rea is well known for his research in circadian photobiology, mesopic vision, psychological responses to light, lighting engineering and visual performance. He is the author of more than 250 scientific and technical articles related to vision, lighting engineering and human factors, and was the editor-in-chief of the 8th and 9th editions of the Illuminating Engineering Society (IES) Lighting Handbook. He has been elected Fellow of the Society of Light

and Lighting (UK) and Fellow of the IES. In addition, he is recipient of the IES Medal. Rea has also been honored with the William H. Wiley Distinguished Faculty Award for those who have won the respect of the faculty at Rensselaer through excellence in teaching, productive research and interest in the totality of the educational process. Dedicated to the notion that our society undervalues light because we do not properly measure its benefits, his recent book, "Value Metrics for Better Lighting," brings together a wide range of research to illustrate how the effective use of light can benefit society and the environment.