

# Northwestern Vision Seminar Series

Department of Ophthalmology, Feinberg School of Medicine  
&  
Department of Biomedical Engineering, McCormick School of Engineering  
Are Honored to Announce



## David R. Williams, PhD

Dean for Research of Arts, Science, & Engineering  
William G. Allyn Professor of Medical Optics  
Director, Center for Visual Science  
University of Rochester

### ***“Functional Imaging of Single Cells in the Living Eye”***

The correction of the eye's aberrations with adaptive optics (AO) has made it possible to image the normal and diseased retina of the living eye at microscopic resolution. I will describe recent developments in the deployment of this technology, many of which combine AO and other imaging modalities with the goal of obtaining not only structural but also functional information at a cellular and sometimes subcellular spatial scale. I will illustrate the value of this approach with examples including single and two-photon fluorescence imaging of individual retinal cells, which allows us to optically probe the electrical signals the retina sends to the brain as well as molecular events in photoreceptors that would otherwise be invisible. It may be that these high resolution imaging tools, combined with recent advances in our ability to record from and control neurons with light, will eventually help complete our understanding of the computations the retina performs that allow us to see, and also help to restore vision in the blind.

**Thursday, March 12, 2015**

**Reception at 6:00PM**

**Seminar at 6:30PM**

Robert H. Lurie Medical Research Center

Baldwin Auditorium

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Chicago, Illinois

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