

*Stephenson School of Biomedical Engineering  
Seminar Series Presents*

**DIFFUSE OPTICAL TOMOGRAPHY**



**JOSEPH P. CULVER, PH.D.**

Mallinckrodt Institute of Radiology  
Washington University School of Medicine

1:30–2:30 p.m.

Friday, November 15, 2019  
Gallogly Hall, Room 127

**BIO:**

Joseph P. Culver, PhD, is a professor of radiology recognized for helping develop optical neuroimaging technologies to map brain function in humans and animals. Based at Washington University's Mallinckrodt Institute of Radiology. Culver earned his bachelor's degree in math and physics in 1985 from Whitman College in Walla Walla, Wash., followed by a second bachelor's degree in physics from the University of Washington, Seattle, in 1988. He earned his doctorate in physics from the University of Pennsylvania in 1997 and joined the faculty at the School of Medicine in 2003.

**ABSTRACT:**

Diffuse Optical Tomography is a technology that uses light from outside the head to track what the brain is doing. Optical imaging avoids the radiation exposure and bulky magnets other brain imaging technologies require. The approach is particularly useful for studying children and people with cochlear implants, pacemakers, deep brain stimulators and other implants that cannot be used safely in an MRI machine. In another project, his lab is developing neuroimaging techniques to map blood and calcium dynamics for use in animal studies to help researchers identify changes in brain networks associated with neurologic disease.