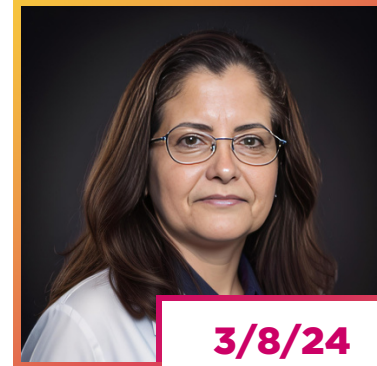


DELIA DEBUC, PHD., earned her Ph.D. in Applied Physics from the University of Michigan in 2002 and currently serves as a Research Associate Professor of Ophthalmology at the Bascom Palmer Eye Institute, University of Miami School of Medicine. With specialized training in ocular imaging technology and image analysis, she is renowned as a leading biophysicist in her field.

Dr. DeBuc's research group has garnered significant support from prestigious institutions, including grants from the Juvenile Diabetes Research Foundation, the National Institutes of Health, the Alzheimer's Association, the National Institute on Aging, the Finker Frenkel Legacy Foundation, and the National Eye Institute. Her research endeavors focus on advancing medical applications of ultrafast technology and optical imaging, particularly enhancing ocular healthcare capabilities. Dedicated to exploring novel ocular multimodal biomarkers in neurodegenerative eye and central nervous system diseases, such as diabetic retinopathy and Alzheimer's, Dr. DeBuc is at the forefront of groundbreaking research. She is deeply committed to leveraging Artificial Intelligence applications for disease diagnosis and runs a multidisciplinary lab that collaborates extensively with national and international investigators.



Dr. Delia Cabrera DeBuc

Research Associate Professor of Ophthalmology
University of Miami

Friday, March 8th | 9:00 AM | EC 2300

Exploring Biophotonics for Ocular and Brain Disease Diagnostic

ABSTRACT: Advancements in Biophotonics offer promising avenues for diagnosing ocular and brain diseases through non-invasive and high-resolution imaging techniques. This interdisciplinary field integrates cutting-edge optical technologies such as optical coherence tomography (OCT), scanning laser ophthalmoscopy (SLO), laser speckle contrast imaging (LSCI), and functional near-infrared spectroscopy (fNIRS) to delve into the pathophysiology of neurodegenerative conditions. By leveraging these tools, researchers aim to identify novel biomarkers associated with diseases like diabetic retinopathy, multiple sclerosis, Alzheimer's, and Parkinson's. Their research aims to uncover distinctive structural and functional signatures indicative of disease onset, progression, and severity through rigorous investigation and analysis of optical imaging data. Insights gleaned from these studies hold significant implications for early diagnosis, prognosis, and therapeutic interventions for ocular and brain disorders. This investigation underscores the critical role of Biophotonics in advancing our understanding of neurodegenerative diseases and highlights the potential impact of optical imaging modalities in clinical practice and translational research.



Through the generous support of the Wallace H. Coulter Foundation, the Department of Biomedical Engineering facilitates weekly lectures each year during academic terms. Experts in all areas of Biomedical Engineering are invited to provide a research seminar and to meet with faculty and students to discuss the latest developments and research in Biomedical Engineering.

Friday, March 8th, 2024 | 9:00AM - 10:00AM | EC 2300

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