

# University of Houston - Biomedical Engineering Seminar

Friday, October 15, 2021, 12 noon

Via Zoom: <https://uh-edu-cougarnet.zoom.us/j/93512038041>

## Eye's structure, optical & biomechanics properties from imaging



**Susana Marcos, Ph.D**

### Abstract

The seminar will present novel techniques based on optical coherence and sectioned microscopy to investigate the structural (full 3-D geometry, refractive index; collagen arrangement), optical (aberrations; retinal image quality &/ its relation to vision), and mechanical (Young's modulus, mechanical models) of cornea, lens and sclera. Applications in myopia, presbyopia and keratoconus, and the evaluation of photo-activated treatments of these conditions will be discussed

### Biosketch

Susana Marcos is an acclaimed researcher in the field of visual optics and ocular imaging. She is a pioneer in the development of new techniques for the evaluation of the eye, including retinal imaging instruments, aberrometers, adaptive optics, anterior segment imaging of the eye and intraocular lens designs. In July 2021 she was appointed Director of Center for Visual Science at Rochester. Dr. Marcos earned her Bachelor and PhD degrees in Physics at the University of Salamanca. After a postdoctorate at the Schepens Eye Research Institute, she established her lab at the Institute of Optics in Madrid and advanced to become its Director. Professor Marcos is the inventor of 20 patent families. Her research has been key in spin-off companies Plenoptika and 2EyesVision, which she co-funded in 2015. These companies commercialize the Quicksee and the SimVis technologies respectively. Recognition of her work has led to many awards, including the Adolph Lomb Medal, OSA Fellow, Alcon Research Institute Award, King Jaime I Award, and National Research Award in Engineering. She has been an editor for Vision Research, Biomedical Optics Express, Optica (OSA), and Scientific Culture Editorial Board (CSIC).