BIOMEDICAL ATOMIC FORCE MICROSCOPY

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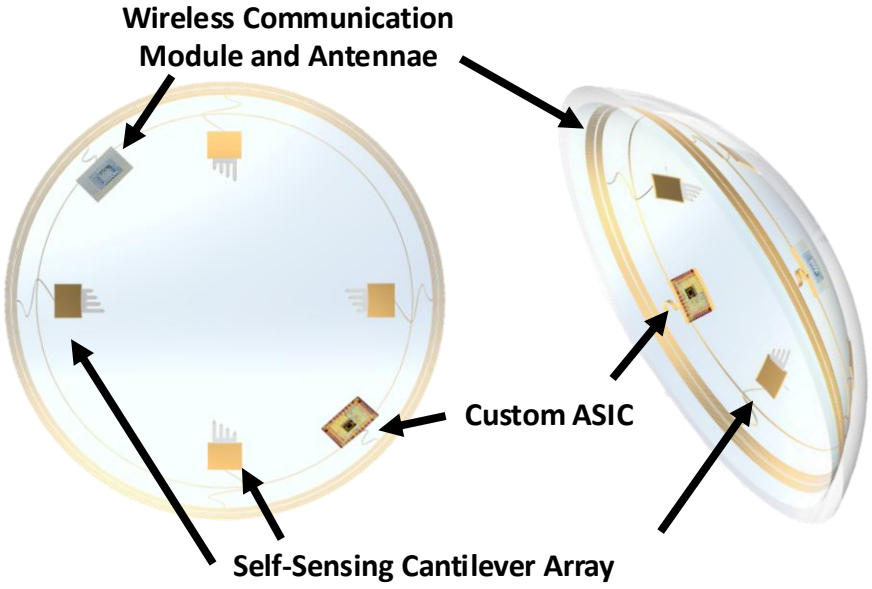
UNIVERSITY OF MIAMI HEALTH SYSTEM

Our mission is to apply advanced imaging technologies to investigate the structure and mechanics of cells and tissues of the eye. Our main research areas include glaucoma and keratoconus.

GLAUCOMA

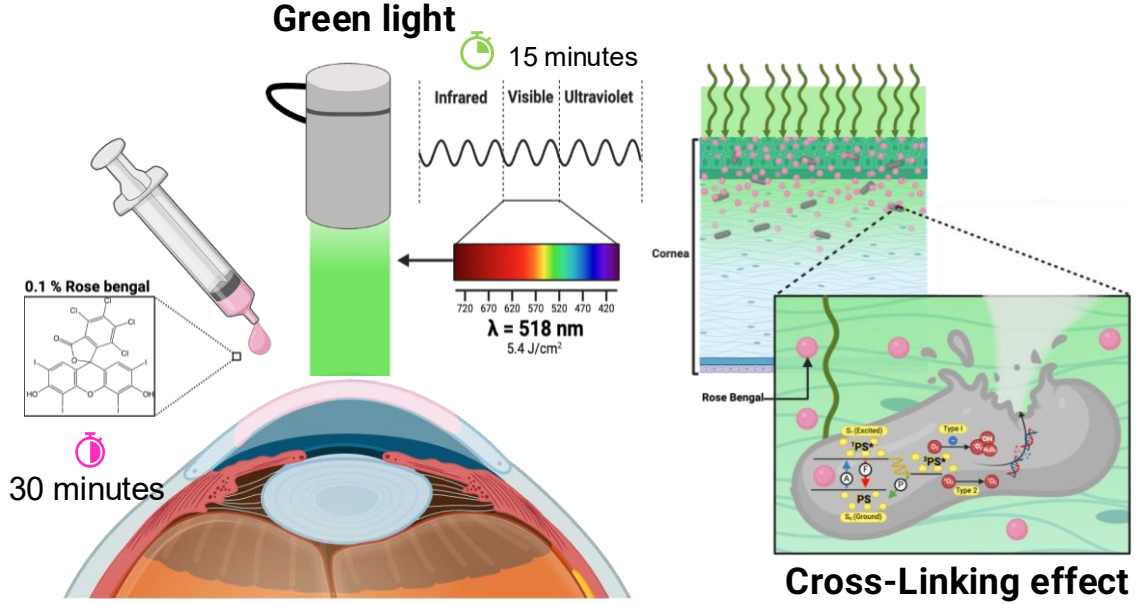
Glaucoma is a group of eye diseases that eventually cause vision loss and blindness if not treated early enough. Increased intraocular pressure the sole modifiable risk factor for glaucoma.



We aim to develop a wearable sensor based on Atomic Force Microscopy (AFM) that can provide a reliable measure of intraocular pressure (IOP).

KERATOCONUS

Keratoconus is a degenerative disease of the cornea affecting up to 1 in 2000 people worldwide. It leads to significant astigmatism and, if not treated, patients will eventually need a corneal transplant.



We are developing novel techniques that increase the mechanical strength of the cornea. Procedure efficacy is quantified using Atomic Force Microscopy.