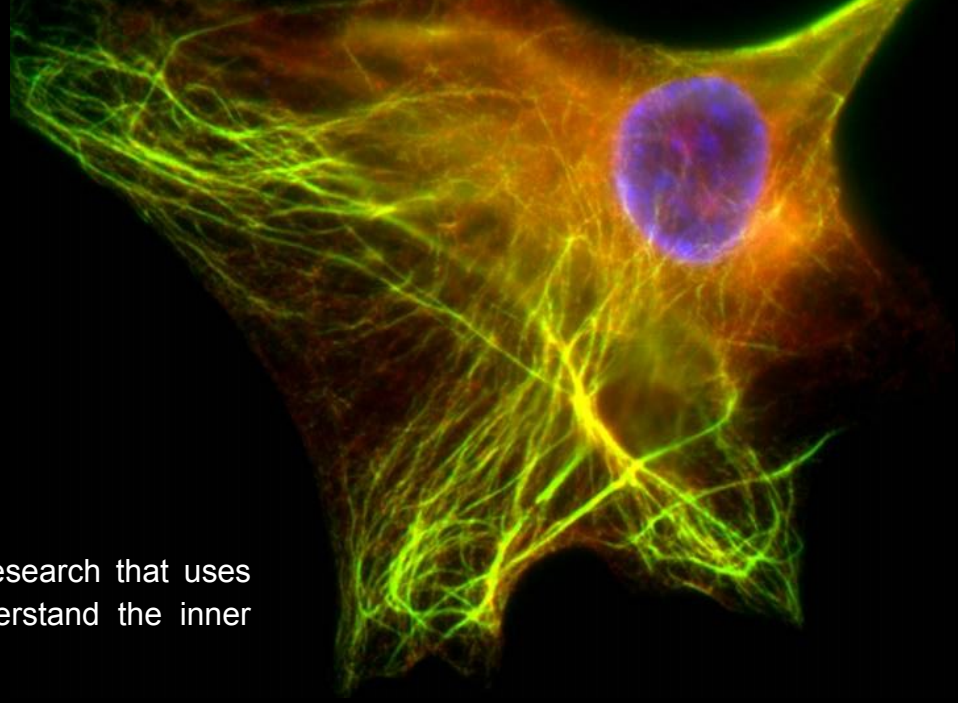
PHOTONICS IN HEALTHCARE



Biophotonics is an emerging area of scientific research that uses light and other forms of radiant energy to understand the inner workings of cells and tissues in living organisms.

The biophotonics research conducted in the department of biomedical engineering at FIU tackles a wide range of important medical conditions such as eye disease, breast cancer, skin lesions, and pre-term labor, to name a few. Biophotonics at FIU is highly translational where novel technologies are quickly transferred to the clinical setting.

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Anuradha Godavarty, Ph.D.: With the goal of widespread, real time pre-screening of women in all segments of the populations for breast cancer. Dr. Godavarty and her team have invented a near-infrared scanner that is hand-held, safe, affordable, comfortable, non-invasive, hygienic, and battery or laptop operated.

Chenzhong Li, Ph.D.: Dr. Li and his team are developing a device that could monitor 'minute by minute' responses in the brain as humans engage in different activities, such as communication, reading, or writing. The biosensor provides a critical tool for Alzheimer's researchers to assess the formation of plaque in the brain, key to understanding the disease.

Jessica Ramella-Roman, Ph.D.: Dr. Ramella-Roman and her laboratory are currently working on the detection of early signs of eye disease, methodologies for non-invasive monitoring of skin health, and non-invasive tools to assess pre-term labor.

Jorge Riera Diaz, Ph.D.: Dr. Riera and his team are developing strategies to integrate different modalities of brain imaging to understand dysregulations in the cortical multicellular signaling associated with epilepsy. Groundbreaking research utilizes optogenetic approaches.

Shuliang Jiao, Ph.D.: Dr. Jiao and his team are developing new imaging technology to provide diagnostic information about the functions of the photoreceptors, the retinal nerve fiber layer and the retinal pigment epithelium of the eye. and functional images of the retina.

Wei-Chiang Lin, Ph.D.: Dr. Lin is developing non-destructive diagnostic devices based on intrinsic characteristics of diseased and injured tissues and using them to guide surgery.