* Visiting Scholar:

Urs Utzinger

Associate Professor and Associate Departmenthead Biomedical Engineering

University of Arizona

* Seminar Title

Imaging Tissue with UV light.

* Brief Bio

I received an engineering degree (M.S. 1989, mechanical engineering) and a Ph.D. (Ph.D. 1995, technical sciences) from the Swiss Federal Institute of Technology (ETH), Zürich Switzerland. I worked at The University of Texas in Austin as post-doctoral fellow. In 2001, I became faculty at the University of Arizona where I am currently an Associate Professor and Associate Department Head in Biomedical Engineering. I am also holding appointments in Obstetrics and Gynecology, Optical Sciences, Electrical and Computer Engineering, and the BIO5 Institute. From 2012 until end of 2014 I served as interim Department Head in Biomedical Engineering when our program grew to 200 undergraduate students and the first two class graduated from the program. I develop clinical imaging instrumentation to evaluate gynecological and gastrointestinal cancer. Using microscopy techniques I also study the extra cellular matrix and angiogenesis.

* Abstract

Fluorescence imaging with UV radiation has been used in research settings for the last two decades. It was conceived as a tool sensitive to alteration in metabolism, protein synthesis and extracellular matrix remodeling. Initially we proposed to detect atherosclerotic plaques, and then built clinical devices for instantaneous cervical diagnosis and later for laparoscopic ovarian cancer evaluation and now endoscopy in the fallopian tubes. Recently we adapted the technology to create high contrast images through simple combination of multiple images for colonic lesion detection. In the past, the performance of many optical diagnostic imaging systems has been evaluated through sensitivity and specificity assessment of a standalone system.  However, there are visual detection tasks where high contrast images of difficult-to-observe lesions could become an integral role in meeting detection rate targets for physicians.