

## UT Health San Antonio Institutional Optical Imaging Core Facility

The Optical Imaging Core Facility (OIF) provides high quality services to researchers at UT Health San Antonio (SA), other academic research institutions, and business corporations. The core houses a wide spectrum of state-of-the-art optical imaging systems to meet the demands for various biomedical in vitro and in vivo applications, from single molecules to whole animals and from cultured cells to deep tissue, including high temporal resolution for live cell imaging of rapid events. The OIF is located in two campus sites, one situated in the Dental School Building on the main (Long) campus and the other in the South Texas Research Facility Building on the Greehey campus, together totaling 24,00 sq. ft.. The core is managed jointly o

### Personnel:

Dr. James Lechleiter, Professor of Cell Systems and Anatomy, has served as Director of the OIF since 2004. He has extensive experience with imaging technology and its application towards current problems in cell biology. He lectures and co-directs a graduate level course entitled "Practical Optical Microscopy (CSAL5083)" and shares patents on a confocal microscope for simultaneous imaging with visible and ultraviolet light as well as a multi-photon laser scanning microscope using an acoustic optical detector. Dr. Lechleiter has served as a member of the National Science Foundation (NSF) Study Panels on Instrumentation Development for Biomedical Research and has served on Signal Transduction and Regulation.

Dr. Exing Wang joined UT Health SA in October 2011 and has served as Associate Director since. Previously, he managed the Indiana Center for Biological Microscopy and was the director of the Microscopy and Imaging Core Facility at Rensselaer Polytechnic Institute. He has an extensive background in quantitative optical microscopy and applied optics. He has built and modified several different types of advanced microscopes, including confocal, multiphoton, and light sheet. He has developed many image analytical methods through diverse biomedical studies. Since joining UT Health SA, he has been teaching a graduate level course entitled "Practical Optical Microscopy (CSAT 5083)", and serves as the course co-Director.

Mr. Jimmy Wewer is the core facility imaging

This confocal and multiphoton system is equipped with an Olympus IX 81 inverted microscope, three internal channels for confocal, including two spectral channels for flexible optical configurations, and three external non-descanned channels for multiphoton imaging. This system is ideal for 3-dimensional imaging of fixed cultured cells, tissue slices as well as in vivo imaging. Multiphoton enhances depth of penetration and contrast for imaging of thick specimens. LSM Technology objective inverter device is available for converting this inverted microscope to an upright style for conducting intravital microscopy. Visible lasers for confocal microscopy: violet diode (405 nm), Argon (458, 488, 514 nm), and HeNe (543 nm), Diode (635 nm); femtosecond pulse laser for multiphoton microscopy: Coherent Chameleon Ti:Sapphire, tunable range 715 – 900 nm.

Prairie Confocal/Multiphoton System (STRF 252)

This laser scanning confocal and multiphoton imaging system is mounted on a Nikon TE2000-U (i) inverted microscope.

