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Selected links:
- Biophotonics Imaging Laboratory >>
- PubMed Citations >>
- Case Center for Imaging Research >>

Research Summary

Dr. Rollins' research interests are in the application of advanced optics and photonics technologies for imaging and characterization of biological samples, with particular emphasis on detection of early disease and monitoring of therapy in human tissues. His research program focuses on advancing the state of the art in imaging of tissue microstructure and function using coherent optical interactions with biological samples. The technique of optical coherence tomography (OCT) is the primary basis of his research. Current applications of OCT imaging under investigation include detection of early cancer in the gastrointestinal tract, biometry and diagnostic imaging in the eye, and imaging of cardiac architecture in animal models of arrythmogenic conditions and of cardiac development. Current development projects include imaging blood flow in living patients and animals using Doppler OCT, and developing novel functional and molecular imaging methods of spectroscopic OCT. Dr. Rollins has active collaborations with clinical and scientific investigators several institutions, including Case Western Reserve University, University Hospitals of Cleveland, the Cleveland Clinic Foundation, Duke University, and University of Rochester.

Recent Publications

- Wang H, Pan Y, Rollins AM, Extending the effective imaging range of spectral-domain optical coherence tomography using a fiber optic switch, *Optics Letters* 33, 2632-2634, 2008.
- Qi X, Pan Y, Hu Z, Kang W, Willis JE, Olowe K, Sivak Jr MV, Rollins AM, Automated quantification of colonic crypt morphology using integrated microscopy and optical coherence tomography, *Journal of Biomedical Optics* 13, 054055, 2008.
- Hucker WJ, Ripplinger CM, Fleming CP, Fedorov VV, Rollins AM, Efimov IR, Bimodal Biophotonic Imaging of the Structure-Function Relationship in Cardiac Tissue, *Journal of Biomedical Optics* 13, 054012, 2008.
- Gargesha M, Jenkins MW, Rollins AM, Wilson DL, Denoising and 4D visualization of OCT images, *Optics Express* 16, 12313-12333, 2008.
- Fleming, CP, Ripplinger CM, Webb B, Efimov IR, Rollins AM, Quantification of cardiac fiber orientation using optical coherence tomography, *Journal of Biomedical Optics Letters* 13, 030505, 2008.
- Wang H, Jenkins MW, Rollins AM, A combined multiple SLED broadband light source at 1300 nm for high resolution optical coherence tomography, *Optics Communications* 281, 1896-

1900, 2008.

- Hu Z, Pan Y, Rollins AM, Analytical model of spectrometer-based two-beam spectral interferometry, *Applied Optics* 46, 8499-8505, 2007.

- Hu Z, Rollins AM, Fourier domain optical coherence tomography with a linear-in-wavenumber spectrometer, *Optics Letters* 32, 3525-3527, 2007.

- Jenkins MW, Chughtai OQ, Basavanhally AN, Watanabe Mand Rollins AM, In vivo imaging of the embryonic heart using gated optical coherence tomography, *Journal of Biomedical Optics* 12, 030505, 2007.

- Lin RC, Li Y, Tang M, McLain M, Rollins AM, Izatt JA, Huang D, Screening for Previous Refractive Surgery in Eye Bank Corneas Using Optical Coherence Tomography, *Cornea* 26, 594-599, 2007.

- Jenkins MW, Adler DC, Gargesha M, Huber R, Rothenberg F, Belding J, Watanabe M, Wilson DL, Fujimoto JG, Rollins AM, Ultrahigh-speed optical coherence tomography imaging and visualization of the embryonic avian heart using a buffered Fourier domain mode locked laser, *Optics Express* 15, 6251-6267, 2007.

- Wang H, Fleming C, Rollins AM, Ultrahigh-resolution optical coherence tomography at 1.15 m using photonic crystal fiber with no zero-dispersion wavelengths, *Optics Express* 15, 3085-3092, 2007.

- Wang H, Rollins AM, Optimization of dual band continuum light source for ultrahigh resolution optical coherence tomography, *Applied Optics* 46, 1787-1794, 2007.

- Jenkins MW, Patel P, Deng H, Montano MM, Watanabe M, Rollins AM, Phenotyping transgenic embryonic murine hearts using optical coherence tomography, *Applied Optics* 46, 1776-1781, 2007.

- Bakri SJ, Singh AD, Lowder AY, Chalita MR, Li Y, Izatt JA, Rollins AM, Huang D, Imaging of Iris Lesions with High Speed Optical Coherence Tomography, *Ophthalmic Surgery, Lasers & Imaging* 38, 27-34, 2007. (Joural cover image)

- Pedersen CJ, Huang D, Shure MA, Rollins AM, Measurement of absolute flow velocity vector using dual-angle, delay-encoded Doppler optical coherence tomography, *Optics Letters* 32, 506-508, 2007.

- Hu Z and Rollins AM, Theory of two beam interference with arbitrary spectra, *Opt. Express* 14, 12751-12759, 2006.

- Thomas J, Wang J, Rollins AM, Sturm J, Comparison of corneal thickness measured with 1310nm optical coherence tomography, ultrasonic pachymetry and a scanning slit method, *Journal of Refractive Surgery,* 22, 671-678, 2006.

- Qi X, Sivak MV, Isenberg G, Willis JE, Rollins AM, Computer-Aided Diagnosis of Dysplasia in Barrett's Esophagus Using Endoscopic Optical Coherence Tomography, *Journal of Biomedical Optics,* 11, 044010, 2006.

- Jeon SW, Shure MA, Baker KB, Huang D, Rollins AM, Chahlavi A, Rezai AR, A Feasibility Study of Optical Coherence Tomography for Guiding Deep Brain Probes, *Journal of Neuroscience Methods*, 154, 96-101, 2006.

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