

### PROFESSOR P. SCOTT CARNEY

P.Scott Carney is a theorist with research interests in inverse problems, imaging, coherence theory and other branches of optical physics. He is application-focused and works closely with a number of great experimenters. Prof. Carney is widely respected for having written the seminal papers in the field of near-field inverse scattering. He has brought the tools of inverse scattering to bear on optical coherence tomography with resulting innovations that have been spun-out into a successful medical imaging start-up. His current interests include problems in inverse -scattering, classification, and spectroscopy.

Prof Carney holds a BS in Engineering Physics from UIUC (1994), and a PhD in Physics from the University of Rochester (1999, advisor: Emil Wolf). He was a postdoctoral associate at Washington University from 1999 to 2001 when he joined the faculty of UIUC ECE.

#### Company Name

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# Confocal Microscopy; a synthetic optical holography breakthrough

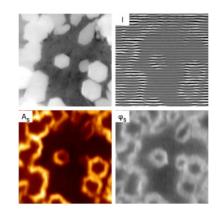
Company Name
Innovation in CM technology

#### PRODUCT FEATURES

- FAST No slow down (over non-phase sensitive)
- ROBUST Self calibrating, no synchronization issues
- Can be easily used by a non-specialist
- Phase information enables post processing e.g. refocusing out-of-focus images

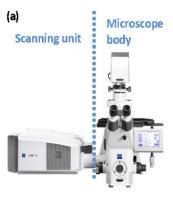
Cheek cells imaged with our technology

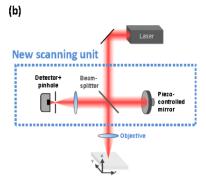




#### PRODUCT DETAILS

Hardware extension will offer SOH in CM. A slow moving interferometer would be inserted into the beam-scanning stack.







## Synthetic Optical Holography

This new technology creates a way to view cells using confocal microscopy in a phase-sensitive manner, through important new contrast mechanisms. This provides quantitative path length measurements below the angstrom-scale, and opens the door to an incredible array of post-acquisition image processing. Our core technology provides quantitative phase measurements with no loss in speed of image acquisition.