Optical Society of Southern California

Meeting Announcement

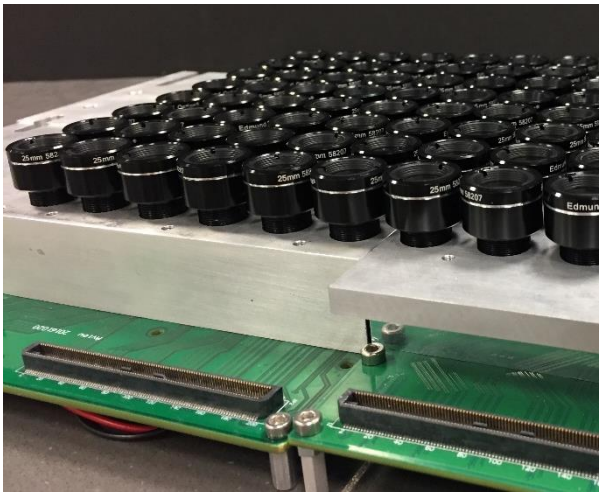
March 13th, 2019

The Micro Camera Array Microscope—
Enabling gigapixel imaging for behavioral biology

by

Dr. Mark Harfouche, CEO & Co-Founder, Ramona Optics

Abstract: Abstract: High-throughput optical microscopy is currently transforming the research fields of genetics, drug discovery and neuroscience. Due to challenges with large lens design, no standard microscope can capture more than 50 megapixels per image snapshot, which makes it impossible to simultaneously image at cellular-resolution over a multi-centimeter viewing area (field of view, FOV). To enable cellular resolution imaging over fields of view 10s of cm in diameter, we utilize an array of miniaturized cameras, tiled in a 12x8 configuration collectively called the MCAM. Each camera is individually addressable and controllable to enable rapid acquisition over the fields of view as large as 20cm in diameter providing gigapixel scale images. Preliminary applications for the MCAM are being developed for behavior imaging of zebrafish larvae in collaboration with collaborators at Duke University and Harvard University.



About our speaker: Mark Harfouche is the CEO and co-founder of Ramona Optics, a startup with headquarters in Durham and offices in the Duke BRiDGE program at the Chesterfield. He received his PhD in Electrical Engineering from Caltech studying semiconductor lasers and 3D imaging modalities based on swept source lasers. His work for Ramona Optics now focuses on using computational optional optics to design new microscopes for research and industrial applications. The development of their first product, the MCAM, is now funded in part by the the NIH for the purpose enabling new behavioral studies of zebrafish.

Wednesday, March 13th, 2019

Reception: 6:00; Dinner: 7:00; Talk: 8:00

Dinner: $35 for members registered by March 7 ($40 non-members), $40 after for members ($45 non-members)

(OSSC Student Members $10 by March 7, $20 after)

Kellogg West Conference Center
Cal Poly Pomona Campus
Horse Hill Drive, Pomona, CA 91768
909-869-2222
On-line Registration: www.ossc.org or
Contact: Alex Small
Events@ossc.org, 240-672-7639

Directions: Enter campus from Temple Avenue, turning right on University. Once on campus, turn right at sign for Kellogg West, and go up the hill. Parking is free in the Kellogg West lot.