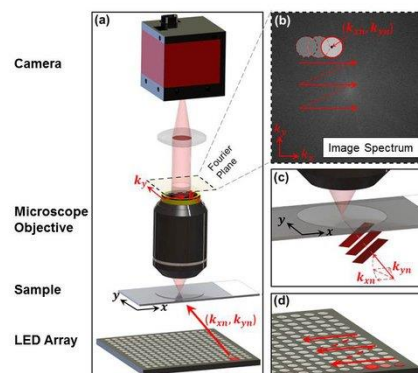


OSSC Combined In-Person and Online Event "Computation in microscopy: How computers are changing the way we build and use microscopes"

Changhuei Yang, Ph.D., California Institute of Technology

Abstract:

The level of computational power we can currently access, has significantly changed the way we think about, process and interact with microscopy information. In this talk, I will discuss some of our recent computational microscopy and deep learning work, that showcase some of these shifts in the context of pathology and life science research. I will talk about Fourier Ptychographic Microscopy (FPM) – the first demonstrated computational approach for numerically zeroing out physical aberrations from microscopy images. As a novel way to collect and process microscopy data, FPM can also bring significant workflow advantages to pathology. I will also talk about the use of Deep Learning in image analysis and point out some of impactful ways Deep Learning can improve the way we deal with image data in pathology and life science research. Looking into the near future, the surprising findings of these current endeavors strongly indicate that the redesign of microscope to better suit these computational needs would be instrumental for the next level of AI based image analysis.

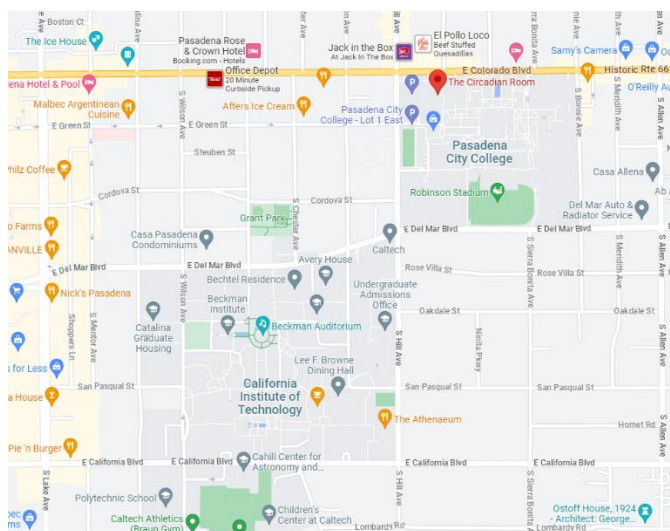


About Our Speaker:



Changhuei Yang is the Thomas G. Myers Professor of Electrical Engineering, Bioengineering and Medical Engineering and a Heritage Medical Research Institute Principal Investigator at the California Institute of Technology. He works in the area of biophotonics and computational imaging. His research team has developed numerous novel biomedical imaging technologies over the past 2 decades – including technologies for focusing light deeply into animals using time-reversal optical methods, lensless microscopy, ePetri, Fourier Ptychography, and non-invasive brain activity monitoring methods. He has worked with major companies, including BioRad, Amgen and Micron-Aptina, to develop solutions for their technological challenges.

He has received the NSF Career Award, the Coulter Foundation Early Career Phase I and II Awards, and the NIH Director's New Innovator Award. He is a Coulter Fellow, an AIMBE Fellow and an OSA Fellow. He was elected as a Fellow in the National Academy of Inventors in 2020.



OSSC Combined In-person and Online Event Oct. 4, 2023

Reception: 6:00pm Dinner: 7:00pm Presentation: 8:00pm
Dinner - Members: \$35 Non-Members: \$40 Students: \$10
Late Fees of \$10, after 11:59 pm Sept. 29, 2023

No fee for in-person without dinner or online attendance

Online Registration until Tue, Oct. 3, 2023

Registration Required

[Register Here for In-Person or Online](https://www.osscc.org)
www.osscc.org

Venue: [The Circadian Room, Pasadena City College](#)

Please post this notice and invite your friends & colleagues to attend!