SPIE. PHOTONICS WEST BIOS

The Moscone Center
San Francisco, California, United States
**2 - 7 February 2019**

# Neural Imaging and Sensing 2019

Monday - Tuesday 4 - 5 February 2019

**This conference is no longer accepting submissions.**
Late submissions may be considered subject to chair approval. For more information, please contact Annie Gerstl.

## Important Dates

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Abstract Due:
25 July 2018

Author Notification:
1 October 2018

Manuscript Due Date:
11 January 2019

## Conference Committee

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### Conference Chairs

Qingming Luo, Huazhong Univ. of Science and Technology (China)
Jun Ding, Stanford School of Medicine (United States)
Ling Fu, Huazhong Univ. of Science and Technology (China)

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Pengcheng Li, HUST-Suzhou Institute for Brainsmatics (China)

## Call for Papers

Genomics and proteomics have opened up an era providing new approaches and new tools for neuroscience research, particularly in optical neuroimaging. “Function follows form”, anatomic structure is the basis for understanding the brain’s function and brain diseases. Brain function depends on neuronal networks and so from a systems biology perspective, should be studied not only the neuron level, but also at the neuronal networks and system levels. Optical imaging can now be applied at multiple levels from gene to molecular, from cellular to tissue and from organ to system levels to yield critical information bridging molecular structure and physiological function.

The purpose of this conference is to provide a forum for scientists, clinicians, engineers and manufacturers to report current developments and to discuss future opportunities for optical stimulating, modulating, manipulating, detecting, or imaging the brain or neural circuits at the gene, molecular, cellular, tissue, organ, or system level, in physiology and anatomy.

Topics will include, but are not limited to, the following:

**Novel optical neuroimaging and sensing:**

- high resolution optical imaging of synaptic physiology, in vivo and/or in vitro neural circuits and networks
- diffusion, fluorescence and polarization spectroscopies, optical coherence tomography, Doppler, photo acoustics, speckle, or optical intrinsic signal imaging for brain cortex activity and neurovascular physiology
- functional near-infrared imaging (fNIRI) for human brain activity, such as working memory
- diffusive optical tomography for animal or human brain studies
- optical imaging of brain-wide neuroanatomical architecture or connectivity
- in vivo fiber-based imaging

**Brain models and biomarkers:**

- brain models and specimen preparation including mouse, treeshrew, marmoset, monkey, or human brain
- optical reporters, markers, dyes, nanoparticles, and molecular probes for brain models or neuronal circuits Image processing and visualization
- segmentation, identification and visualization of brain-wide dataset
- multimodal imaging integrating structural and functional information.