

## Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXVI

This conference has an open call for papers:

**SUBMIT AN ABSTRACT**  
(SIGN IN REQUIRED)

[Submission guidelines for Authors and Presenters](#)

Important Dates	SHOW   HIDE	Additional Conference Information
Abstract Due: 25 July 2018		Chair Emeritus: <b>Carol J. Cogswell</b> , Univ. of Colorado Boulder (United States)
Author Notification: 1 October 2018		
Manuscript Due Date: 11 January 2019		

## Conference Committee

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## Call for Papers

This conference has been a venue to present exciting advances in multidimensional microscopy, including confocal- and coherence-based imaging systems, and microscopes based on fluorescence, polarization and nonlinear optics. While many of the instruments are oriented toward biomedical imaging, the papers usually include applications such as materials science, industrial inspection, and nanoscale metrology. Many microscopes are now fully integrated systems, including computer hardware and software. It is hoped that the broad range of relevant topics being presented at this conference will serve to encourage interaction among instrumentation engineers, computer image analysts, and researchers in the various fields of application.

We consider papers that cover overall system design, as well as more specialized areas: optical image formation, image recording, deconvolution and image restoration in two, three, or more dimensions, image classification, and digital methods of producing and displaying the resulting reconstruction. We especially encourage submission of articles on novel optical and digital techniques for imaging or detecting nanoscale object features, coherence-based imaging and image reconstruction, and full-field quantitative phase imaging, including hardware, models, multiview tomography, algorithms and applications.

Papers are invited in the following and related areas:

- instrumentation and methods for microscopy in 2, 3, or more dimensions
- novel illumination, imaging, and computational methods for exceeding the far field diffraction limit
- innovations in optical modes for microscopy (such as interference, fluorescence, or polarizing) in reflection or transmission
- full-field quantitative phase imaging, including quantitative DIC and holographic imaging techniques
- innovations aimed toward nanostructure detection and imaging, including STED, PALM, STORM, etc.
- advances in confocal microscopy
- new modes of multiphoton fluorescence excitation microscopy
- probe microscopy (atomic force microscopy, near-field scanning optical microscopy)
- time-resolved image acquisition systems
- image processing and analysis
- image reconstruction in 2, 3, or more dimensions
- deconvolution and image estimation in 2, 3, or more dimensions
- computational models
- computational optical sensing and imaging (COSI) techniques for microscopy
- point spread function engineering for enhanced image information content
- wavefront manipulation techniques for correcting aberrations, extending depth of field, etc.
- spectral and hyperspectral imaging
- specimens and procedures for testing and evaluating new instruments and algorithms
- spatio-temporal reconstruction of living cells and tissues
- applications of multidimensional microscopy in materials science
- 3D image visualization techniques, including volume rendering, animation, stereoscopic and holographic displays
- holographic microscopy
- single-plane illumination and light sheet microscopy

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