



# BPS 2021

65<sup>th</sup> Biophysical Society Annual Meeting  
February 22–26, 2021

**Wednesday, February 24, 2021**

**4:00 PM-4:30 PM**

**Carl Zeiss Microscopy LLC**

## **Discovering the Subcellular Dynamics of Life with ZEISS Lattice Lightsheet 7**

In order to best understand the world around us it is necessary to observe microscopic specimens in as natural a state as possible. This requires a transition from imaging fixed to live specimens and expanding from 2D to 3D model organisms. The drive towards live-cell imaging over long timeframes and at high volume speeds brings new challenges. There is evidence that traditional imaging techniques can influence the behaviour of specimens due to phototoxicity, thus affecting the integrity of the results.

The most influential technological breakthroughs which address these challenges have been modifications to the shape of the excitation light. Classical laser-based imaging approaches utilize a gaussian excitation beam which is focussed to a spot or a sheet and scanned as required to excite the sample. As an alternative approach, bessel beams have been combined to introduce a structured pattern to the beam profile. The resulting 'lattice' of light has many benefits for live imaging. The most notable are a reduction of light exposure due to significant improvement in signal to noise while maintaining high resolution and optical sectioning. With lattice-lightsheet microscopy it is possible to capture dynamics at previously unreachable combinations of acquisition speed and resolution over hours and even days.

This talk will describe how the ZEISS Lattice Lightsheet 7 makes long-term volumetric imaging of living cells with subcellular resolution possible without having to change your standard sample preparation protocols to accomodate the instrument. With automatic alignment and easy acquisition workflows, lattice light-sheet imaging is now as accessible as using a standard inverted microscope.

Join us for this webinar to learn how ZEISS Lattice Lightsheet 7 allows you to discover the subcellular dynamics of life.

### **Speaker**

*Renée Dalrymple, Product Marketing Manager – Life Sciences Lattice Line, Carl Zeiss Microscopy LLC*