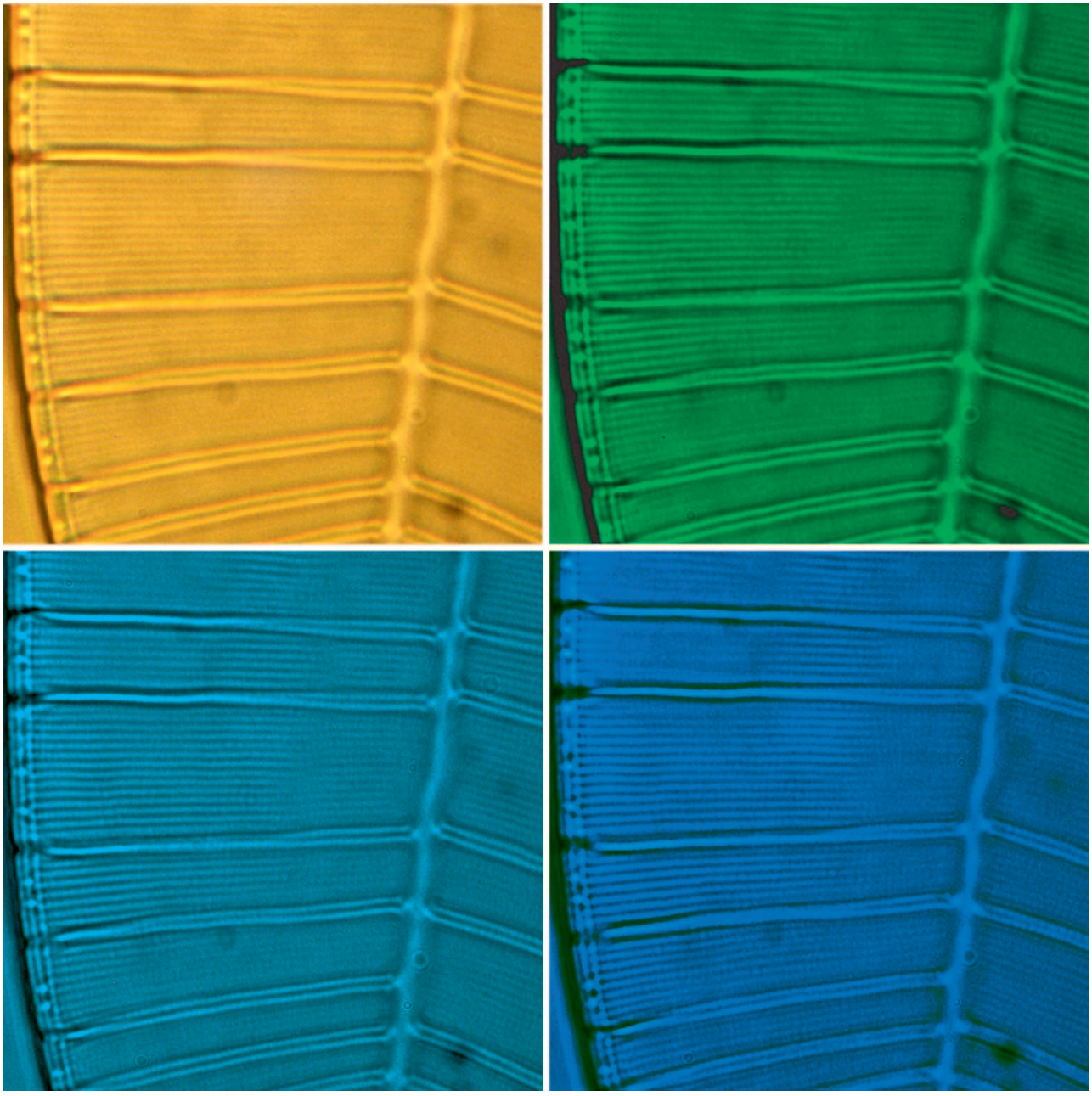
Volume 19 Number 1 2011 January

# Microscopy TODAY



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# MICROSCOPY & MICROANALYSIS 2011

## August 7-11 ★ Nashville Tennessee


Nashville: Music City USA

## *Extended Abstracts*

## *Due February 15!*

### Call for Papers and Registration Brochure:

www.microscopy.org/MandM/2011

- Symposia descriptions and other paper topics
- Instructions for abstract submission
- Awards information: application instructions, criteria, and prizes
- Educational events: Short courses, tutorials, and intensive in-week workshops

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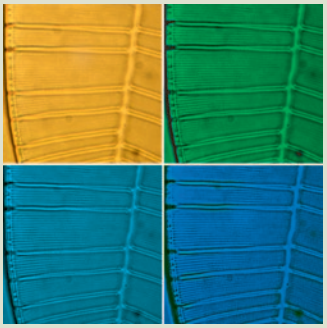
About the Cover



*Surirella gemma* imaged with four monochromatic wavelengths. Image width = 3 μm.

*See article by Piper and Chmela.*

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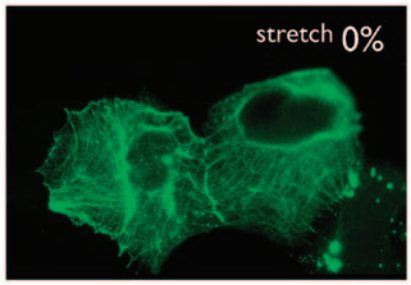
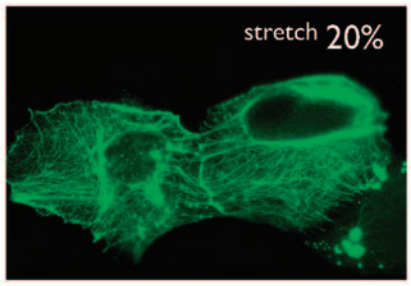
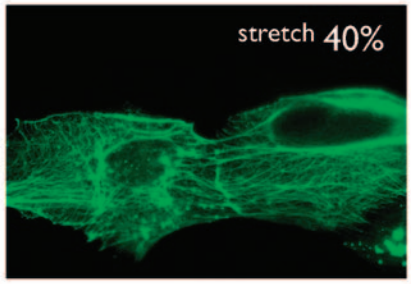
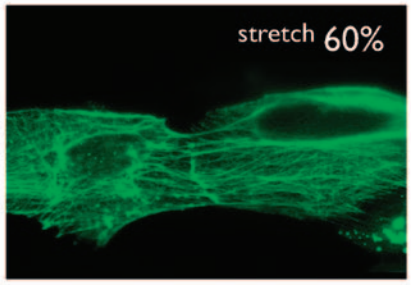
bringing you the latest emerging technology:

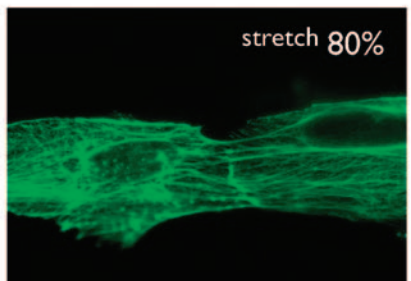
# computer controlled cell deforming



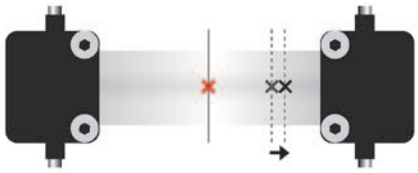




## Cells can be imaged while being stretched

The effect of cell stretch, compression or other mechanical stimuli has become a new and important scientific focus. Many devices have been developed to stretch cells. Usually the cells are cultivated on elastic membranes and the entire membrane is deformed to deform the attached cells. This approach has been proven useful but suffers one big disadvantage: If cells are to be imaged during or after the membrane is deformed, the cells are displaced relative to the optical axis of the microscope and a microscopic observation becomes virtually impossible. As shown in the figure below only the part in the center portion (red X) remains stable relative to the objective of the microscope, when the membrane is stretched.

Our dcCS10-compensation is moving the entire membrane during the stretch so that it counteracts this displacement. As a result the region of interest is still precisely positioned above the objective of the microscope during (and after) the stretch.



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cellstretcher

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