

The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the April 1 and 15, 2011, issues. From among the many fine articles in the journal, the Board selects for these Highlights articles that are of broad interest and significantly advance knowledge or provide new concepts or approaches that extend our understanding.

**The posttranslational modification of tubulin undergoes a switch from deetyrosination to acetylation as epithelial cells become polarized**

G. B. Quinones, B. A. Danowski, A. Devaraj, V. Singh, and L. A. Ligon

Polarity leads to a shift in tubulin modification and microtubule organization. In unpolarized epithelial cells deetyrosinated microtubules point to the spreading edge, but in polarized cells acetylated microtubules point to the apical domain. In both cases the modified microtubules are oriented to support cargo transport to areas of high need.

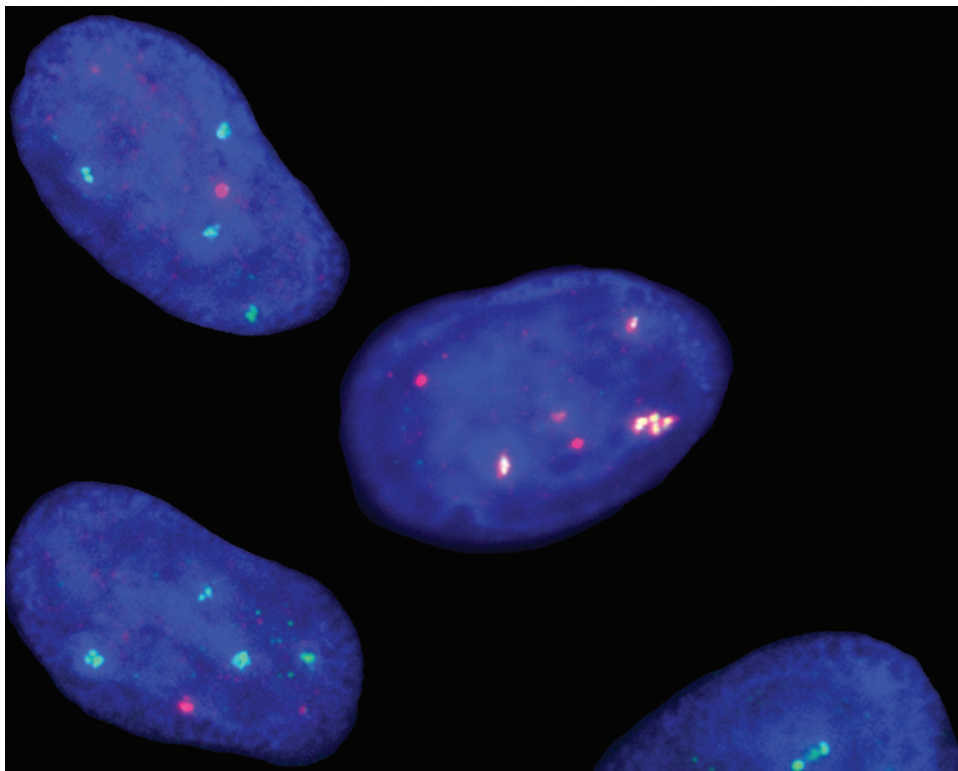
**Mol. Biol. Cell 22 (7), 1045–1057**

**Coilin participates in the suppression of RNA polymerase I in response to cisplatin-induced DNA damage**

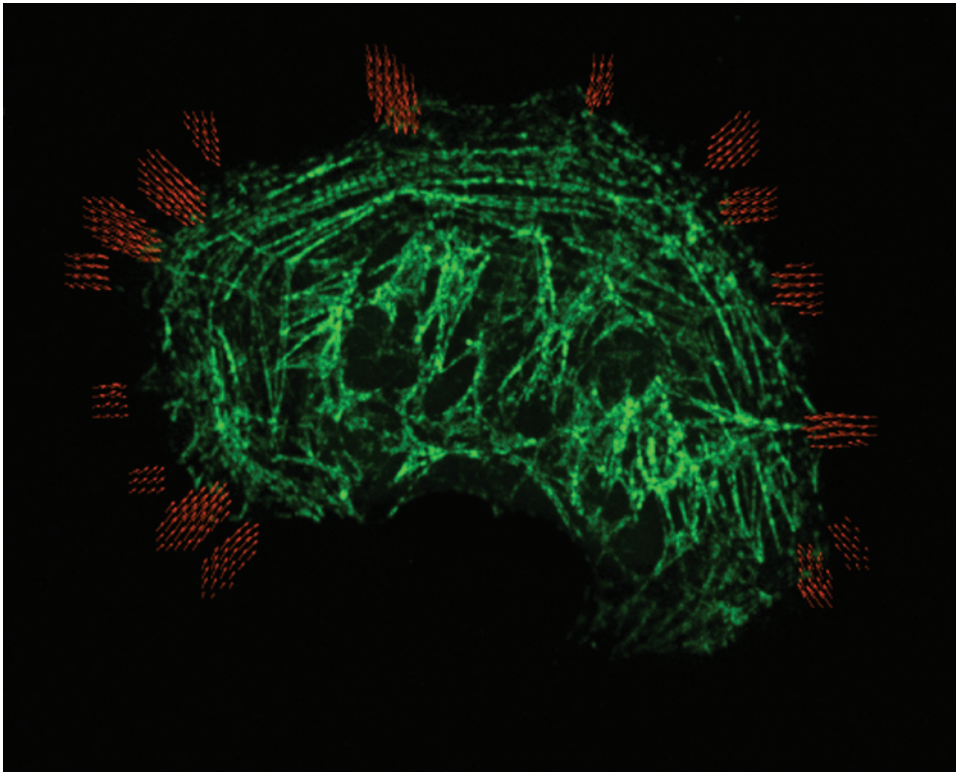
A. S. Gilder, P. M. Do, Z. I. Carrero, A. M. Cosman, H. J. Broome, V. Velma, L. A. Martinez, and M. D. Hebert

This study's findings identify a novel and unexpected function for coilin, independent of its role in snRNP biogenesis, establishing a new link between the DNA damage response and the inhibition of rRNA synthesis.

**Mol. Biol. Cell 22 (7), 1070–1079**



Colocalization (yellow) between the Cajal body marker protein coilin (red) and the largest subunit of RNA polymerase I, RPA-194 (green), in response to DNA damage induced by the chemotherapeutic agent cisplatin (center). (Image: Andrew Gilder, University of Mississippi Medical Center)



Confocal image of a U2OS osteosarcoma cell expressing GFP-myosin light chain (green) with overlapping traction stress vectors (red). (Image: Yvonne Aratyn-Schaus, University of Chicago)

#### **Filamin depletion blocks endoplasmic spreading and destabilizes force-bearing adhesions**

*C. D. Lynch, N. C. Gauthier, N. Biais, A. M. Lazar, P. Roca-Cusachs, C.-H. Yu, and M. P. Sheetz*

Cells severely depleted of filamins were observed to have numerous motility-related defects, including a defect in endoplasmic spreading; smaller, more dynamic focal adhesions; and an inability to sustain high levels of traction force. The endoplasm as a separate mechanical unit spread by pulling forces is also discussed.

**Mol. Biol. Cell 22 (8), 1263–1273**

#### **Actin depolymerizing factor controls actin turnover and gliding motility in *Toxoplasma gondii***

*S. Mehta and L. D. Sibley*

Actin-based motility is vital for host cell invasion by protozoan parasites such as *Toxoplasma*, which provides a model for studying actin-based motility in parasites. Our study reveals that, in addition to intrinsic differences in actin dynamics, regulatory proteins like actin depolymerizing factor are required to regulate this process in vivo.

**Mol. Biol. Cell 22 (8), 1290–1299**

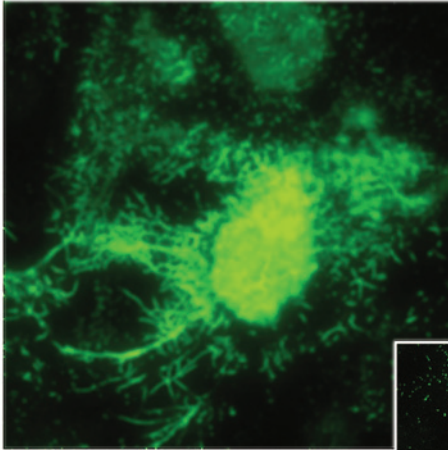
#### **Dynamic and structural signatures of lamellar actomyosin force generation**

*Y. Aratyn-Schaus, P. W. Oakes, and M. L. Gardel*

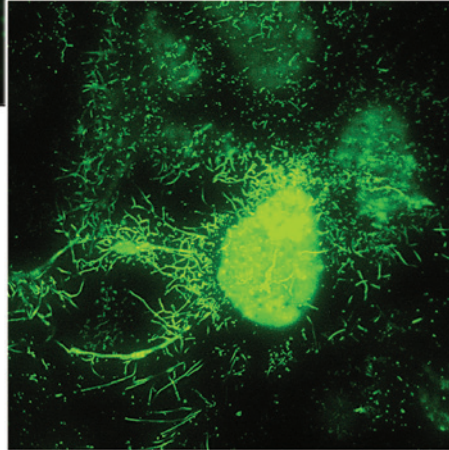
The dynamics and organization of the lamellar actin cytoskeleton at different levels of tension are identified. The force-dependent steps of stress fiber assembly are studied.

**Mol. Biol. Cell 22 (8), 1330–1339 ■**

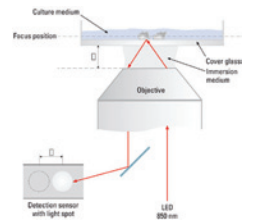
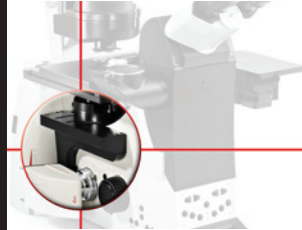
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## Time Lapse With Leica AFC



**TIRF imaging with simultaneous AFC**  
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Courtesy of Prof. Dr. Ralf Jacob and Dr. Alexandra  
Elli, Institute of Cytobiology and Cytopathology,  
University of Marburg, Germany.



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