



Cover: This image shows the overlay of several images taken during the contraction of an *in vitro* reconstituted network made of actin filaments (red) and myosins (green). Filaments were nucleated from a micropatterned circular array of dots coated with a fragment of WASP. Credit: Anne-Cécile Reymann, CytoMorpho Lab, France.

FIRST PERSON

First person – Hyunjung Lee
jcs229880

First person – Sonal
jcs227066

First person – Gina Monzon
jcs227082

First person – Susana Montenegro Gouveia
jcs226050

First person – Mitro Miihkinen
jcs223719

First person – Nicola De Franceschi
jcs223644

First person – Jan Steinkühler
jcs222141

CELL SCIENTISTS TO WATCH

Interview with the Guest Editor – Manuel Théry
jcs230144

Cell scientist to watch – Franziska Lautenschläger
jcs230151

CELL SCIENCE AT A GLANCE

Centriole assembly at a glance
Gönczy, P. and Hatzopoulos, G. N.
jcs228833

Reconstitution of cell migration at a glance
Garcia-Arcos, J. M., Chabrier, R., Deygas, M., Nader, G., Barbier, L., Sáez, P. J., Mathur, A., Vargas, P. and Piel, M.
jcs225565

REVIEWS

More from less – bottom-up reconstitution of cell biology
Ganzinger, K. A. and Schwille, P.
jcs227488

How does T cell receptor clustering impact on signal transduction?
Goyette, J., Nieves, D. J., Ma, Y. and Gaus, K.
jcs226423

Minimal *in vitro* systems shed light on cell polarity
Vendel, K. J. A., Tschirpke, S., Shamsi, F., Dogterom, M. and Laan, L.
jcs217554

Reconstituting the reticular ER network – mechanistic implications and open questions
Wang, N. and Rapoport, T. A.
jcs227611

IP₃ receptors – lessons from analyses *ex cellula*
Rossi, A. M. and Taylor, C. W.
jcs222463

Reconstruction of destruction – *in vitro* reconstitution methods in autophagy research
Moparthy, S. B. and Wollert, T.
jcs223792

Dynamic stability of the actin ecosystem
Plastino, J. and Blanchoin, L.
jcs219832

SHORT REPORTS

The depolymerase activity of MCAK shows a graded response to Aurora B kinase phosphorylation through allosteric regulation
McHugh, T., Zou, J., Volkov, V. A., Bertin, A., Talapatra, S. K., Rappsilber, J., Dogterom, M. and Welburn, J. P. I.
jcs228353

Claudin-4 reconstituted in unilamellar vesicles is sufficient to form tight interfaces that partition membrane proteins
Belardi, B., Son, S., Vahey, M. D., Wang, J., Hou, J. and Fletcher, D. A.
jcs221556

In vitro drusen model – three-dimensional spheroid culture of retinal pigment epithelial cells
Usui, H., Nishiwaki, A., Landiev, L., Kacza, J., Eichler, W., Wako, R., Kato, A., Takase, N., Kuwayama, S., Ohashi, K., Yafai, Y., Bringmann, A., Kubota, A., Ogura, Y., Seeger, J., Wiedemann, P. and Yasukawa, T.
jcs215798

Membrane fluctuations and acidosis regulate cooperative binding of 'marker of self' protein CD47 with the macrophage checkpoint receptor SIRP α
Steinkühler, J., Rózycki, B., Alvey, C., Lipowsky, R., Weikl, T. R., Dimova, R. and Discher, D. E.
jcs216770

RESEARCH ARTICLES

Force-history dependence and cyclic mechanical reinforcement of actin filaments at the single molecular level
Lee, H., Eskin, S. G., Ono, S., Zhu, C. and McIntire, L. V.
jcs216911

Curvature-dependent constraints drive remodeling of epithelia
Maechler, F. A., Allier, C., Roux, A. and Tomba, C.
jcs222372

Polarity sorting drives remodeling of actin-myosin networks
Wollrab, V., Belmonte, J. M., Baldauf, L., Leptin, M., Nédeléc, F. and Koenderink, G. H.
 jcs219717

Myosin-II activity generates a dynamic steady state with continuous actin turnover in a minimal actin cortex
Sonal, Ganzinger, K. A., Vogel, S. K., Mücksch, J., Blumhardt, P. and Schwille, P.
 jcs219899

Activation of mammalian cytoplasmic dynein in multimotor motility assays
Monzon, G. A., Scharrel, L., Santen, L. and Diez, S.
 jcs220079

PLK4 is a microtubule-associated protein that self-assembles promoting *de novo* MTOC formation
Montenegro Gouveia, S., Zitouni, S., Kong, D., Duarte, P., Ferreira Gomes, B., Sousa, A. L., Tranfield, E. M., Hyman, A., Loncarek, J. and Bettencourt-Dias, M.
 jcs219501

Spatial positioning of EB family proteins at microtubule tips involves distinct nucleotide-dependent binding properties
Roth, D., Fitton, B. P., Chmel, N. P., Wasiluk, N. and Straube, A.
 jcs219550

Lipid-dependence of target membrane stability during influenza viral fusion
Haldar, S., Mekhedov, E., McCormick, C. D., Blank, P. S. and Zimmerberg, J.
 jcs218321

The ESCRT protein CHMP2B acts as a diffusion barrier on reconstituted membrane necks
De Franceschi, N., Alqabandi, M., Miguet, N., Caillat, C., Mangenot, S., Weissenhorn, W. and Bassereau, P.
 jcs217968

Drp1 polymerization stabilizes curved tubular membranes similar to those of constricted mitochondria
Ugarte-Urbe, B., Prévost, C., Das, K. K., Bassereau, P. and García-Sáez, A. J.
 jcs208603

The Arf-GDP-regulated recruitment of GBF1 to Golgi membranes requires domains HDS1 and HDS2 and a Golgi-localized protein receptor
Quilty, D., Chan, C. J., Yurkiw, K., Bain, A., Babolmorad, G. and Melançon, P.
 jcs208199

TOOLS AND RESOURCES

The use of decellularised animal tissue to study disseminating cancer cells
Grey, J. F. E., Campbell-Ritchie, A., Everitt, N. M., Fezovich, A. J. and Wheatley, S. P.
 jcs219907

A synthetic biology platform for the reconstitution and mechanistic dissection of LINC complex assembly
Majumder, S., Willey, P. T., DeNies, M. S., Liu, A. P. and Luxton, G. W. G.
 jcs219451

Regulated reconstitution of spindle checkpoint arrest and silencing through chemically induced dimerisation *in vivo*
Amin, P., Soper Ní Chafraidh, S., Leontiou, I. and Hardwick, K. G.
 jcs219766

Reconstitution of immune cell interactions in free-standing membranes
Jenkins, E., Santos, A. M., O'Brien-Ball, C., Felce, J. H., Wilcock, M. J., Hatherley, D., Dustin, M. L., Davis, S. J., Eggeling, C. and Sezgin, E.
 jcs219709

Microtubule dynamics regulation reconstituted in budding yeast lysates
Bergman, Z. J., Wong, J., Drubin, D. G. and Barnes, G.
 jcs219386

ProLIF – quantitative integrin protein–protein interactions and synergistic membrane effects on proteoliposomes
De Franceschi, N., Miihkinen, M., Hamidi, H., Alanko, J., Mai, A., Picas, L., Guzmán, C., Lévy, D., Mattjus, P., Goult, B. T., Goud, B. and Ivaska, J.
 jcs214270