Cover: Drosophila larval epidermal cells undergo apoptosis during metamorphosis. Upon caspase activation, levels of E-cadherin (cyan) are diminished around the apoptotic cell, and cell-cell adhesions with neighboring non-dying cells are disengaged. The contraction of two actomyosin cables (myosin in red) formed in dying and neighboring cells drives apoptotic cell extrusion from a tissue. See Research article by Teng et al. on p. 95.

EDITORIAL
1 The times they are a-changin’ Pourquie, O.

SPOTLIGHT
3 Towards a CRISPR view of early human development: applications, limitations and ethical concerns of genome editing in human embryos Plaza Reyes, A. and Lanner, F.

CORRESPONDENCE

MEETING REVIEW
12 From stem cells to human development: a distinctly human perspective on early embryology, cellular differentiation and translational research Craft, A. M. and Johnson, M.

REVIEW
17 Understanding development and stem cells using single cell-based analyses of gene expression Kumar, P., Tan, Y. and Cahan, P.

RESEARCH REPORTS
33 Tfap2 and Sox1/2/3 cooperatively specify ectodermal fates in ascidian embryos Imai, K. S., Hikawa, H., Kobayashi, K. and Satou, Y.

38 Differential temporal control of Foxa.a and Zic-r.b specifies brain versus notochord fate in the ascidian embryo Ikeda, T. and Satou, Y.

RESEARCH ARTICLES

54 A set of simple cell processes is sufficient to model spiral cleavage Brun-Usan, M., Marín-Riera, M., Grande, C., Truchado-Garcia, M. and Salazar-Ciudad, I.

63 Rewiring of embryonic glucose metabolism via suppression of PFK-1 and aldolase during mouse chorioallantoic branching Miyazawa, H., Yamaguchi, Y., Sugiuira, Y., Honda, K., Kondo, K., Matsuda, F., Yamamoto, T., Suematsu, M. and Miura, M.

74 Atypical chemokine receptor ACKR2 controls branching morphogenesis in the developing mammary gland Wilson, G. J., Hewit, K. D., Pallas, K. J., Cairney, C. J., Lee, K. M., Hansell, C. A., Stein, T. and Graham, G. J.

83 PDGFRα controls the balance of stromal and adipogenic cells during adipose tissue organogenesis Sun, C., Berry, W. L. and Olson, L. E.

95 Remodeling of adhesion and modulation of mechanical tensile forces during apoptosis in Drosophila epithelium Teng, X., Qin, L., Le Borgne, R. and Toyama, Y.

106 Conserved and novel functions of programmed cellular senescence during vertebrate development Davaapil, H., Brockes, J. P. and Yun, M. H.

115 Interactions between mural cells and endothelial cells stabilize the developing zebrafish dorsal aorta Stratman, A. N., Pezoa, S. A., Farrelly, O. M., Castranova, D., Dye, L. E., III, Butler, M. G., Sidik, H., Talbot, W. S. and Weinstein, B. M.


139 The Drosophila Hox gene Ultrabithorax acts in both muscles and motoneurons to orchestrate formation of specific neuromuscular connections Hessinger, C., Technau, G. M. and Rogulja-Ortmann, A.

151 Modulation of apical constriction by Wnt signaling is required for lung epithelial shape transition Fumoto, K., Takigawa-Imamura, H., Sumiyama, K., Kaniwa, T. and Kikuchi, A.

163 MS23, a master basic helix-loop-helix factor, regulates the specification and development of the tapetum in maize Nan, G.-L., Zhai, J., Ariket, S., Morrow, D., Fernandes, J., Mai, L., Nguyen, N., Meyers, B. C. and Walbot, V.

173 Publisher’s Note: Modulation of dorsal root ganglion development by ErbB signaling and the scaffold protein Sorbs3 by Malmquist et al. Development doi:10.1242/dev.084640 Pourquie, O.