



*Unit Director*  
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## **The mission of this unit is to understand the biogenesis of the cell compartments and the molecular mechanisms that govern normal cellular functions.**

The main research themes of the unit include:

- Transport pathways between compartments,
- The dynamics of the actin- and microtubule-based cytoskeletons,
- Three-dimensional structures of molecular motors,
- Mechanisms of cell division and cell migration,
- The mechanisms involved in establishing the polarity of epithelia and their differentiation,
- Signalling pathways associated with tumour progression in several mouse models and human tumours,
- Regulation of adhesive systems during morphogenesis and development.

## **Key publications**

### **Year of publication 2017**

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Fachinetti D, Logsdon GA, Abdullah A, Selzer EB, Cleveland DW, Black BE (2017 Jan 9)

**CENP-A Modifications on Ser68 and Lys124 Are Dispensable for Establishment, Maintenance, and Long-Term Function of Human Centromeres.**

*Dev Cell* : 40 : 104-113 : [DOI : 10.1016/j.devcel.2016.12.014](https://doi.org/10.1016/j.devcel.2016.12.014)

**Year of publication 2016**

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Sebastian Hoffmann, Marie Dumont, Viviana Barra, Peter Ly, Yael Nechemia-Arbely, Moira A McMahon, Solène Hervé, Don W Cleveland, Daniele Fachinetti (2016 Nov 24)

**CENP-A Is Dispensable for Mitotic Centromere Function after Initial Centromere/Kinetochore Assembly.**

*Cell reports* : 2394-2404 : [DOI : 10.1016/j.celrep.2016.10.084](https://doi.org/10.1016/j.celrep.2016.10.084)

Sirigu S, Hartman J, Planelles-Herrero VJ, Ropars V, Clancy S, Wang X, Chuang G, Qian X, Lu P-P, Barrett E, Rudolph K, Royer C, Morgan B, Stura EA, Malik FI, Houdusse A (2016 Nov 4)

**Highly selective inhibition of myosin motors provides the basis of potential therapeutic application.**

*Proceedings of the National Academy of Sciences of the United States of America* : 201609342 : [DOI : 10.1073/pnas.1609342113](https://doi.org/10.1073/pnas.1609342113)

Anne Houdusse, H Lee Sweeney (2016 Oct 9)

**How Myosin Generates Force on Actin Filaments.**

*Trends in biochemical sciences* : [DOI : S0968-0004\(16\)30152-9](https://doi.org/10.1016/j.tics.2016.10.004)

Pylypenko O, Welz T, Tittel J, Kollmar M, Chardon F, Malherbe G, Weiss S, Michel C, Samol-Wolf A, Grasskamp A, Hume A, Goud B, Baron B, England P, Titus MA, Schwille P, Weidemann T, Houdusse A, Kerkhoff E (2016 Sep 14)

**Coordinated recruitment of Spir actin nucleators and myosin V motors to Rab11 vesicle membranes**

*eLife* : 5 : e17523 : [DOI : 10.7554/eLife.17523](https://doi.org/10.7554/eLife.17523)

Virginie Ropars, Zhaohui Yang, Tatiana Isabet, Florian Blanc, Kaifeng Zhou, Tianming Lin, Xiaoyan Liu, Pascale Hissier, Frédéric Samazan, Béatrice Amigues, Eric D Yang, Hyekeun Park, Olena Pylypenko, Marco Cecchini, Charles V Sindelar, H Lee Sweeney, Anne Houdusse (2016 Sep 2)

**The myosin X motor is optimized for movement on actin bundles.**

*Nature communications* : 12456 : [DOI : 10.1038/ncomms12456](https://doi.org/10.1038/ncomms12456)