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Cellular forces : adhering, shaping, sensing and dividing

Hoorn, H. van

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PUBLICATIONS

1. "A closer look at cellular force exertion - inversion improves resolution"
H. van Hoorn, T. Schmidt
in preparation
2. "Outward force exertion is crucial for mitosis"
H. van Hoorn, M. de Valois, C. Backendorf, T. Schmidt
in preparation
3. "Orientation of the actin cytoskeleton determines cell shape and directed force exertion"
H. van Hoorn, W. Pomp, T. Schmidt
in preparation
4. "GFAP isoforms control intermediate filament network dynamics, cell morphology, and focal adhesions"
M. Moeton, O.M.J.A. Stassen, H. van Hoorn, T. Schmidt, J.A. Sluijs, V. van der Meer, L.J. Kluivers, E.A.J. Reits, M.E. van Strien, E.M. Hol
in preparation
5. "p130Cas is a mechanosensor that modulates force exertion at focal adhesions"
H. van Hoorn¹, D.M. Donato¹, H.E. Balcioglu, E.H. Danen, T. Schmidt
in preparation

¹these authors contributed equally to this work

6. "Distinct cellular mechanotransduction through $\alpha 5 \beta 1$ and $\alpha v \beta 3$ integrins"
H.E. Balcioglu, H. van Hoorn, D.M. Donato, T. Schmidt, E.H. Danen
under review at Journal of Cell Science
7. "The nanoscale architecture of force-bearing focal adhesions"
H. van Hoorn, R. Harkes, E.M. Spiesz, C. Storm, D. van Noort, B. Ladoux, T. Schmidt
Nano Lett., **14** (8), 4257-4262 (2014)
8. "De uitgever aan het woord 2010: de trendmonitor van de uitgeef-
branche"
T. Huibers, K. Voermans, H. van Hoorn, J. van Raak, E. Oltmans,
M. de Gier
Book published by Thaeisis, Utrecht (2010)
9. "The Influence of cell shape anisotropy on the tensile behavior of
open cell aluminum foam "
E. Amsterdam, H. van Hoorn, J.T.M. de Hosson, P.R. Onck
Adv. Eng. Mat., **10** (9), 877-881 (2008)

CURRICULUM VITAE

Hedde van Hoorn was born on December 21, 1983 in Marum, the Netherlands. He studied Applied Physics at the University of Groningen from 2002 to 2008, specializing in Materials Science. He joined the group of Prof. Jeff de Hosson for both his bachelor's and master's degree. His bachelor's research was focussed on the material properties of Sandvik Nanoflex in collaboration with Philips Research in Drachten. For his master's research he investigated the effect of anisotropy in open-cell aluminium foam structures. His final research internship during his master's degree was in Biological Engineering in the group of Prof. Subra Suresh at the Massachusetts Institute of Technology. There, he investigated the effect of malaria infection on the stiffness of erythrocytes using atomic force microscopy.

After his graduation, Hedde was a strategy consultant in Media and Technology for Thaeasis from 2008 to 2010, where he advised companies and published on his research on trends and developments in the publishing industry. In July 2010 he returned to science when he joined the Physics of Life Processes group at Leiden University as a PhD student. Under the guidance of Prof. Thomas Schmidt he worked on the development of new techniques to probe cell mechanics and apply high-resolution imaging to a range of biological questions. During his 4 years in Leiden, Hedde presented his work at numerous conferences in the Netherlands, Singapore, France, Austria and the USA. He assisted with optics experiments in the course "Experimental Physics", taught exercise classes in "Classical Mechanics" and guided 1 bachelor and 3 master students.

In October 2014, Hedde will start a postdoctoral appointment in the group of Prof. Davide Ianuzzi at VU University Amsterdam.

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