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Cell-cell- and cell-matrix interactions in the hematopoietic stem cell niche: a biophysical perspective

**Thursday, 30th June 2022
at 9:15 am**

On site:

Seminar Room (2nd floor)
Helmholtz-Institute for Biomedical Engineering
Pauwelsstr. 20, 52074 Aachen

Zoom:

<https://rwth.zoom.us/j/95826047675?pwd=dTI1Z0xHUzQxREszeTgvdGpDbUdGdz09>

Meeting-ID: 958 2604 7675

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Host: Wolfgang Wagner
Helmholtz-Institute for Biomedical Engineering

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Abstract

Hematopoietic stem cells (HSCs) are the life-long source of all blood cells and, therefore, they are routinely applied to treat patients with hematological disorders. *In vivo*, HSCs are maintained in so-called stem cell niches. These highly specialized microenvironments regulate HSC behavior by an intricate network of signals provided by soluble factors, the extracellular matrix and neighboring niche cells. While the biochemical nature of the resulting interactions has been thoroughly studied during the last decades, only little attention has been paid to the role of biophysical signals in the niche. In this talk, I will shed light on the importance of biophysical parameters for controlling HSC behavior and how this knowledge can be applied in the development of cellular therapies and drug discovery.