POST-DOCTORAL POSITION

Interactive DNA-Mechanosensing Materials to Instruct Cell Behavior

Key words: DNA hydrogels, cell culture, mechanobiology, signaling research

In the framework of an ERC Consolidator Grant, the Walther Lab at the University of Mainz is searching for an ambitious and highly skilled postdoctoral researcher in the area of artificial extracellular matrix materials to understand cell behavior in interaction with mechanosensing DNA hydrogel materials. The project is strongly interdisciplinary, and connects DNA nanotechnology and hydrogel materials with mechanobiology of mammalian cells. The main aim is to establish communication channels between synthetic DNA materials and cells using the exchange of mechanical and chemical information so that the material and the cells co-evolve in a fully interactive manner.

We provide you with an inspiring and collaborative team atmosphere in a multinational and multidisciplinary environment, and ample opportunities to develop towards an individual scientific profile. Cutting-edge analytical infrastructure and facilities are available due to generous support by the University of Mainz and the Gutenberg Research College. A brand-new DNA nanoscience lab and a brand-new cell lab with state-of-the-art infrastructure will accelerate discoveries and make your life as a researcher convenient.

Team. We are an ambitious team, and this position is embedded in an ERC Consolidator Grant project! We provide you with an inspiring and collaborative team atmosphere in a multinational and multidisciplinary environment, and ample opportunities to develop. Brand new, cutting-edge synthetic and analytical infrastructure and facilities are available due to generous support by the University of Mainz and the Gutenberg Research College. We run our own fully equipped cell lab. Prof. Walther (h-index 63, age 42) is a Gutenberg Research Professor, a Max Planck Fellow and a 2 x ERC Awardee. More information on the group can be found here: www.walther-group.com

Selected references on the topic:

1. Merindol, R.; Delechiave, G.; Heinen, L.; Catalani, L. H.; **Walther, A.** "Modular Design of Programmable Mechanofluorescent DNA Hydrogels" *Nature Commun.* 10, 529 (**2019**).
2. Creusen, G.; Schmidt, R. S.; **Walther, A.** One-Component DNA Mechanoprobes for Facile Mechanosensing in Photopolymerized Hydrogels and Elastomers *ACS Macro Letters,* 10, 671 (**2021**)
3. **Walther, A.**; "From Responsive to Adaptive and Interactive Materials and Materials Systems: A Roadmap" *Adv. Mater.* 1905111 **(2019)** (Invited View Point).
4. Ma, V.; Salaita K. "DNA Nanotechnology as an Emerging Tool to Study Mechanotransduction in Living Systems" Small, 1900961 **(2019)**.

EXPECTED CANDIDATE PROFILE

As an ideal candidate you are creative, highly self-motivated, ambitious and communicative to excel in scientific challenges, and have a proven track record with innovative publications in cell culture, extracellular matrix materials, mechanobiology, and hydrogels. Previous research experience in DNA-based materials or molecular force-sensing is a plus.

The position is according to the German salary scale with full social benefits. It is available from spring 2023 and has a duration of 2 years. Bridge funding for an earlier start could be provided. Application Deadline is January 31st.

Please send your full application as a **single** PDF file containing

- letter of motivation including a summary of your past research experience, in particular a meaningful summary of your PhD and master thesis
- Detail in your letter why you believe you are the right person and what you expect from us and from your postdoctoral research stay
- curriculum vitae and list of publications
- Two contacts for reference letters

to andreas.walther@uni-mainz.de (Contact AW for more information)

Prof. Dr. Andreas Walther, University of Mainz, Germany