

December 12, 2022

Postdoctoral Position in Synthetic Biology and Optogenetic Model Biosystems

Our research group at the Institute of Synthetic Biology at the Heinrich-Heine University (HHU) Düsseldorf is looking for a highly motivated and talented **postdoctoral researcher**. Candidates should possess a strong background in cell and molecular biology, human disease research, and must have experience and interest in mammalian stem cell technologies and the cultivation of 3-dimensional tissue cultures including organoids, or stem cell genome engineering. Experience with confocal microscopy, synthetic biology, and deep knowledge in developmental biology and biochemistry are of advantage.

Activities and Responsibilities

The candidate will be part of a project funded by the *VolkswagenStiftung* synergizing concepts of synthetic biology and advanced mammalian cell culture model systems. In particular, the project focuses on the genomic engineering of induced pluripotent stem cell and the implementation and application of synthetic and optogenetic technologies. The project aims to develop spatiotemporal disease models utilizing 3D cell culture techniques and optical control strategies. The combination of optogenetics and synthetic biological switches enables a precise regulation of signals and activities that shall delicately trigger biological responses in order to remodel diseases or modulate the development of 3D *in-vitro* models. The high spatial and temporal precision and the possibility to obtain quantitative informative data are key advantages of the developed technologies.

Qualification Profile

- PhD degree in biology, developmental biology, tissue engineering, cell and molecular biology, biochemistry, biotechnology, or related fields.
- Working experience with stem cells and their maturation into 3-dimensional tissue cultures e.g., organoids, or experience with genome engineering techniques.
- Interest in learning and applying the principles of synthetic biology to stem cell research.
- Deep and broad interest in biology and advanced technologies, self-driven working attitude, good teamworking skills.
- Good English skills.

We Offer

The candidate will pioneer in a young and enthusiastic fully equipped group hosted at the Institute of Synthetic Biology in an international environment. The candidate

will deeply integrate into a joint curriculum within the host institute and participate in seminars and infrastructure-related tasks. Preference will be given to handicapped applicants with equal qualification. The positions will be based on salary grade E 13 (100%) according to the Collective Agreement for the Civil Service (TVöD). The starting date is negotiable.

Please send your application including CV, motivation letter, and the contact details of two references as a single document to Jun-Prof. Hannes Beyer (hannes.beyer@uni-duesseldorf.de).

Sincerely,



Hannes Beyer
Jun-Prof.,

Faculty of Mathematics and Natural Sciences
Institute of Synthetic Biology
Heinrich-Heine University Düsseldorf