1 Group Leader (all genders)  
2 Postdoctoral Researchers (all genders)  
2 Research Assistants (all genders)  

**Next Generation Virtual Patient Engine for Clinical Translation of Drug Candidates**

**What we are looking for**

The BioMed X Institute in Heidelberg, Germany, is establishing a new, fully funded research group in the field of artificial intelligence and machine learning:

**Next Generation Virtual Patient Engine for Clinical Translation of Drug Candidates**

If you hold a PhD or master’s degree with an outstanding track record or strong interest in this field and are interested to lead or collaborate in a cross-functional team of wet lab, data and computer scientists, we invite you to apply with a project proposal for a position in our new research group (1 group leader, 2 postdoctoral researchers, 2 research assistants).

Each BioMed X project team is sponsored by an industry partner. The sponsor of this call for application is Sanofi.

90% of drug candidates fail during clinical development, most of them due to a lack of efficacy as compared to the standard of care.

What if we could test drive drug development candidates in virtual patients to gate the best ones into the clinic and choose the right patients and dosing for clinical trials?

In close collaboration with our pharma partner Sanofi, the task of the new research group is to develop a versatile computational platform which can predict the efficacy of first- or best-in class drug candidates in virtual patient populations at unprecedented accuracy. As a proof-of-concept, the initial model should focus on chronic immune-mediated diseases such as atopic dermatitis (AD) or inflammatory bowel disease (IBD).

Project proposals should focus on the following key challenges:

- Capture and integrate diverse types of disease-relevant data and knowledge (including proprietary datasets of Sanofi ranging from in-vitro and in-vivo preclinical to clinical data sets).
- Develop smart in-vitro, ex-vivo, or organoid assays which capture relevant disease biology at pathway level, single cell level, and in tissues in order to provide feedback loops complementing available training datasets.

- Build a versatile virtual patient engine based on advanced AI/ML technologies which will enable disease-relevant patient endotyping, prediction of disease stratification biomarkers, and virtual head-to-head clinical efficacy comparisons of novel drug candidates with standard of care compounds and compounds of competitors.

- Validate the prediction accuracy using available real-world datasets.

Original ideas reaching far beyond the current state-of-the-art are particularly encouraged.

Group leader positions are intended to suit candidates with a PhD (or equivalent) in data science (medicine / life sciences) or in a related area who would like to develop themselves towards a leadership career path either in academia or industry and have typically between four and eight years of relevant postdoctoral research experience.

Candidates for postdoctoral positions are expected to have completed a PhD (or equivalent) in data science (AI/ML) or molecular biology / cell biology / pharmacology within the last four years and a certain degree of specialization in one or more relevant cutting-edge technologies and scientific areas including, but not limited to genomics, imaging, DNA metabolism, and chromatin remodeling.

**What we offer**

- A position in a fully funded research group: the funding package covering salaries, consumables, services, travel costs, as well as access to the core facilities of neighboring research institutions in Heidelberg.

- An initial term of three years, with the possibility of prolongation for up to two additional years.

- An exciting research opportunity in a multidisciplinary and international research institution with a collegial and flexible working environment.

There is flexibility over starting dates, but successful applicants are welcome to take up post starting **July 1, 2023**.

**Application & Selection Process**

- Please apply online at [https://career.bio.mx/call/2022-BMX-C01](https://career.bio.mx/call/2022-BMX-C01)

- As part of the online application procedure, you will be asked to submit: (i) A **competitive project proposal** that gives us an idea of your scientific expertise and creative potential (3-5 pages describing an interesting core hypothesis, scientific rationale, and a unique experimental approach); (ii) Your **curriculum vitae** including your publication record.

- Deadline for applications: **January 8, 2023**.
After a first selection round, candidates will be invited to a five-day innovation boot camp in Heidelberg from March 20 to 24, 2023. With guidance of experienced mentors, candidates will jointly work on their project proposals and present them in front of a jury on the final day. Successful candidates will be offered a position at the BioMed X Institute in Heidelberg, Germany.

About BioMed X

BioMed X is an independent research institute located on the campus of the University of Heidelberg in Germany, with a world-wide network of partner locations. Together with our partners, we identify big biomedical research challenges and provide creative solutions by combining global crowdsourcing with local incubation of the world’s brightest early-career research talents. Each of the highly diverse research teams at BioMed X has access to state-of-the-art research infrastructure and is continuously guided by experienced mentors from academia and industry. At BioMed X, we combine the best of two worlds – academia and industry – and enable breakthrough innovation by making biomedical research more efficient, more agile, and more fun.

Contact

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