

2018 Helmholtz – OCPC – Program for the involvement of postdocs in bilateral collaboration projects

PART A

Title of the project: Integration of OMICs data to optimize a diabetes self-management digital tool

Helmholtz Centre and institute: HMGU and AME

Project leader: Dr. Christian Gieger & Dr. Rui Wang-Sattler

Web-address: <https://www.helmholtz-muenchen.de/ame>

Description of the project (max. 1 page):

We are looking for a postdoctoral fellow to join the research group of Metabolism at the Research Unit of Molecular Epidemiology, Helmholtz Zentrum München (HMGU). The group is studying metabolic diseases using statistical, bioinformatical and deep learning approaches based on multi-levels of OMICs data from the population-based human cohort.

Diabetes is a lifelong disease affecting multiple organs and is associated with devastating chronic complications (e.g. cardiovascular disease, which is the major cause of death worldwide). The International Diabetes Federation estimates that 425 million people have diabetes, while 1 in 2 adults with diabetes is undiagnosed (212 million) worldwide. To improve diagnosis rate, increased awareness of the symptoms and increased screening opportunities for people at high risk of type 2 diabetes are needed urgently.

We are participating in an EU project with the aim to develop a self-management digital assessment tool and explore predictive modelling approaches. Your task will be the evaluation of integrating multi-levels of OMICs data (e.g. genome, epigenome, transcriptome, proteome and metabolome) as well as personal clinical and life style parameters (e.g. age, sex, BMI, physical activity, medication usage and etc.) in a population-based cohort, in order to optimize both self-management and diagnostic predictions.

The successful candidate will be working in an innovative, well-equipped and scientifically stimulating surrounding. Dr. Christian Gieger, a statistician, is head of the Research Unit of Molecular Epidemiology. Dr. Rui Wang-Sattler leads the Group of Metabolism and she is physicist.

Description of existing or sought Chinese collaboration partner institute (max. half page):

Dr. Christian Gieger and Dr. Rui Wang-Sattler have been collaborating for more than 10 years with Prof. Dr. Yixue Li and Prof. Xu Lin from the Shanghai Institutes for Biological Sciences,

Chinese Academy of Sciences. Three joint workshops have been organized and about 12 scientists participated in mutual exchange visits. These mutual exchanges yielded in 14 joint publications. Additionally two Master students from Prof. Li's institute successfully completed the PhD under the supervision of Dr. Rui Wang-Sattler at the HMGU.

Required qualification of the post-doc:

- PhD degree in bioinformatics, statistics, physics, public health or related fields
- Programming skills and basic knowledge of biochemistry
- Experience in analysing OMICs data is an advantage
- Strong team spirit, excellent communication skills in an international environment

PART B

Documents to be provided by the post-doc, necessary for an application to OCPC via a postdoc-station:

- Detailed description of the interest in joining the project (motivation letter)
- Curriculum vitae, copies of degrees
- List of publications
- 2 letters of recommendation
- Proof of command of English language

PART C

Additional requirements to be fulfilled by the post-doc:

- Max. age of 35 years
- PhD degree not older than 5 years
- Very good command of the English language
- Strong ability to work independently and in a team