

Hier
entsteht
Zukunft!

Foto: Oliver Dietze



Saarland University is a campus university with an international reputation for research excellence, particularly in computer science and in the life sciences and nanosciences. The university is also distinguished by its close ties to France and its strong European focus. Around 17,000 students, studying over one hundred different academic disciplines, are currently enrolled at Saarland University. Saarland University is officially recognized as one of Germany's family-friendly higher-education institutions and with a combined workforce of more than 4000 it is one of the largest employers in the region.

The Chair for Clinical Bioinformatics at the Center for Bioinformatics in Saarbrücken is inviting applications for the following position commencing at the earliest opportunity.

Academic research assistant (m/f/x)

Reference number W2010, salary in accordance with the German TV-L salary scale¹, pay grade: E13, for 3 years, employment: 100 % of standard working time. There are two positions to be filled.

The job posting is part of the Chair's initiative aiming to establish a highly qualified junior research group of 2-4 individuals positioned around the new discipline of spatial transcriptomics.

Workplace/Department:

Can bacteria or viruses promote or cause neurodegenerative developments in human? Recent evidence suggests that T-cells that are activated and primed against viruses patrol the central nervous system of Parkinson's disease and Alzheimer's disease patients. Underestimating these so far hidden effects would mean serious implications for our healthcare system, which today is already facing challenges due to occurring multi-resistant germs and attendant superinfections. Together with the Helmholtz-Institute for Pharmaceutical Research Saarland (HIPS) the chair prepares to search for molecular traces and minimal-invasive biomarkers for detection of viral and bacterial antigens or exogenous genomic stretches (e.g., retroviral RNA, bacterial plasmids, etc.) that humans are confronted with during their life as to comprehensively decipher the human "Neuroinfectiome", eventually. As a subsequent step, the hypothesis that specific barrier cells (Epithelial lineage) as for instance located at the blood-brain barrier, are susceptible to bacterial or viral infections, and that indeed those cause prolonged changes in the gene expression programs at the epithelium as well as the underlying tissue. To this end, the intriguing questions whether such

¹ TV-L = collective agreement on remuneration of public sector employees in the German *Länder*

The pay grade assigned to an employee depends on their professional qualifications and the number of years of service. Each pay grade is further subdivided into levels. Entry-level employees with no previous experience will initially be assigned a level 1 rating. After one year at level 1 of the E10 pay grade, an employee will move up to level 2. After a further two years, the employee will move to level 3, etc.

processes are regionally distinct and localized to specific organ regions, as for example the liquor producing choroid plexus, and how fast or deep they affect the human tissue should be addressed using spatial transcriptomics.

A putative realization of this project should primarily be based on integrative analyses of sufficiently large RNA- and DNA-seq and metagenomic data sets, which are derived from corresponding patient cohorts as well as publicly available high-quality data sets. The task comprises creativity-driven development of new explorative approaches for the *in silico* detection of bacterial and viral signatures in human samples (for instance blood, brain, gut, etc..). Ultimately, a comprehensive classification and systematic interpretation of such relevant signatures in the context of evolution of *Homo sapiens* and in interaction with pathogenic organisms is worth striving for.

We are looking for talented junior bioinformaticians who join us in this aspiring and exciting field of research. Together with its international partners and colleagues the Chair for Clinical Bioinformatics actively pursues collaborations with leading field industry and offers an excellent environment of research experts as well as the necessary computing infrastructure & key resources.

Job requirements and responsibilities:

- **Focus** of the advertised position will be to connect human RNA- and DNA-sequencing data sets with methods and important aspects from modern research on infectious diseases. To this end, prospectively collected samples should be combined with existing ones and comprehensively analysed in the context of aging and neurodegenerative disease research, with an emphasize on the role of pathogenic organisms.
- **Additional tasks:** First ever characterisation / definition of the human "Neuroinfectiome" as well as a systematic description of Host-Pathogen interactions in novel reference databases.

Your academic qualifications:

- Completed academic degree (Master or PhD) in Bioinformatics, Medical informatics, Computational Biology, Biotechnology, Computer science with natural sciences minor, or a related profession. The opportunity to pursue a PhD (Master entry level) or Habilitation (PhD entry level) will be granted.
- Experience in evaluating high-throughput sequencing data both from *short-read* platforms, for instance Illumina, in particular RNA- and DNA-sequencing or metagenomics, and from *long-read* platforms, e.g., Oxford Nanopore.
- Strong knowledge on the principles of bioinformatics-driven data analysis, i.e., to process large data sets in a comprehensive manner as being able to draw reliable and effective conclusions.
- Broad fundamental knowledge on molecular biology, human genetics, immunology, and neurosciences.
- Strong knowledge on scientific programming (C++ / Python / R, or similar), modern software engineering and efficient algorithms.

The successful candidate will also be expected to:

- Solid knowledge on scientific programming (C++ / Python / R, or similar) and how to set up and use modern database systems.
- Demonstrate practice on how to use UNIX-based operating systems and the according CLI-tools.
- Motivation to work independently and get to know new scientific topics.
- Motivation to supervise students during their thesis (Bachelor / Master).
- Knowledge on how to operate in the lab is **not required**, although a basic understanding of important wet-lab techniques is certainly advantageous.

What we can offer you:

- Access to a broad and flourishing branch of research along with contact to outstanding local / international peers & complementing expertise
- Excellent compute infrastructure
- A flexible work schedule allowing you to balance work and family

- A broad range of further education and professional development programmes
- Individual supervising agreements to serve custom requirements for type and volume of scientific advisory
- An occupational health management model with numerous attractive options, such as our university sports programme
- Supplementary pension scheme ('RZVK')
- Discounted tickets on local public transport services ('Jobticket')

We look forward to receiving your **application**. Please quote **reference number W2010** when applying in full. Applications must be received by no later than **15 December 2021** and should be sent each of to the following addresses:

Mr. Fabian Kern, fabian.kern@ccb.uni-saarland.de

Prof. Dr. Andreas Keller, andreas.keller@ccb.uni-saarland.de

To qualify as full application please **include at least the following documents**:

- Personal cover letter with your current contact details referencing this exact job posting.
- Curriculum Vitae written in English language and following the academic standard formatting.
- Certificate of the latest obtained scientific degree (PhD / Master)
- List of all scientific publications, if applicable.

Optional: Personal statement letter of at most two pages written in English language, outlining your motivation on why you apply to the job posting and why you think you fit our team best.

If you have any **questions**, please contact Prof. Keller by E-Mail for assistance.

In accordance with the objectives of its equal opportunities plan, Saarland University seeks to increase the proportion of women in this field. Qualified women candidates are therefore strongly encouraged to apply. Preferential consideration will be given to applications from disabled candidates of equal eligibility. The successful candidate has the option of choosing to work part-time in this position.

Pay grade classification is based on the particular details of the position held and the extent to which the applicant meets the requirements of the pay grade within the TV-L salary scale.

When you submit a job application to Saarland University you will be transmitting personal data. [Please refer to our privacy notice for information on how we collect and process personal data in accordance with Art. 13 of the Datenschutz-Grundverordnung](#). By submitting your application you confirm that you have taken note of the information in the Saarland University privacy notice.