The **Rheinische Friedrich-Wilhelms-Universität** Bonn is an international research university with a broad spectrum of disciplines. 200 years of history, around 38,000 students, more than 6,000 employees and an excellent reputation at a national and international level: The University of Bonn is one of the most important universities in Germany and has achieved the status of an Excellence with its **ImmunoSensation² Cluster**.
The **bioinformatics unit of the Platform for Single Cell Genomics and Epigenomics (PRECISE)** at the Department of Genomics & Immunoregulation at the Life & Medical Sciences (LIMES) Institute of the University of Bonn and **DZNE** Bonn are looking for a

PhD candidate in computational biology/bioinformatics

Starting April 2023 for three years in the field of single-cell transcriptome analysis in the field of cardiovascular diseases and neurodegeneration.

The LIMES Institute is part of the Faculty of Mathematical and Natural Sciences at the University of Bonn. The Institute has been established to foster molecular research spanning from immunology to metabolism using a broad spectrum of cutting-edge technologies including state-of –the-art genomic technologies. In this regard, the Department for Genomics and Immunoregulation at the LIMES-Institute together with PRECISE at the DZNE Bonn are now seeking for scientists in the field of bioinformatics, computational biology and systems immunology to work as part of a team in a Marie Skłodowska-Curie Action (MSCA) Doctoral Network (DN) "MIRACLE" project 101119370.

The MIRACLE project (Multilevel inflammatory regulation in cardiometabolic disease): The main aim of this project is to define local and environmental factors and pathways that drive chronic inflammation in disease using key technologies and translation of this knowledge to develop novel therapies with potential to reduce cardiometabolic inflammation. To achieve this, our research group will apply single cell technologies to study cellular control of innate immunity at transcriptional level. The PhD candidate will implement and developed operational bioinformatics pipelines to expose single cell inflammatory regulatory pathways that underlie cardiometabolic and neurodegenerative diseases development.

Our requirements are

- Strong background in computational biology, bioinformatics, biomathematics, biostatistics
- Computer programming skills.
- Strong proficiency in computer programming, with a primary focus on R.
- Advanced experience in the analysis of single-cell RNA-Seq and bulk RNA-Seq.
- Experience in multiomics data analysis.
- Experience in reproducible research using HPCs, Unix, docker and singularity.
- Strong background in biology and cardio-metabolic and neurodegenerative diseases.
- Master's degree or equivalent.
- Excellent communications and writing skills in English.
- Enthusiasm to work in a thriving academic research environment.
- An interest to work in an international environment.
- A collaborative attitude.
- Ability to work independently as well as in a team.

What we have to offer

- A challenging and versatile research project focusing on neurodegeneration and cardiovascular diseases.
- State of the art technologies to tackle important scientific and medical questions.
- A thriving interdisciplinary research environment at PRECISE and the Limes Institute.
- A fully established bioinformatics department.
- Be part of the Systems Medicine department at the DZNE institute (Bonn), with a
- collaborative and supportive research environment with extended expertise
- Occupational pension (VBL)
- Many options available for university sports
- Remuneration in accordance with TV-L pay grade 13.

The University of Bonn is an equal opportunities employer.

Additional information

About MIRACLE

The MIRACLE network, funded by the European Commission (2024-2028), is made up to train a new generation of researchers working on the latest advances in single cell biology, multi-omics analysis and newest insights in macrophage biology in the context of cardiometabolic disease. These advances revealed heterogeneous and dynamic accumulation of (immune) cell populations in tissues that associate with disease initiation, development and particularly clinical outcome, a notion that has immense implications on our view of chronic inflammatory diseases and their treatment. Unique know-how is ready to be transferred to highly talented research fellows. In MIRACLE, twelve doctoral candidates will receive tailored training that enables them to study local and environmental factors that drive cardiometabolic inflammation as well as develop strategies to suppress them, via the integrated use of cutting-edge single cell, spatial mapping, computational and disease modelling approaches. Moreover, they will be able to develop and polish skills in translational science by working with biotech- and pharma experts and clinicians pledging clinically actionable outcomes. It is aimed to organize secondments of several months for each DC to both academic and non-academic institutions in the MIRACLE network that will significantly add value to the training. The combination of high-level science with top-notch infrastructures, resources, and solid data places MIRACLE at the forefront to move single cell biology towards cardiometabolic (precision) medicine and foster the scientists of tomorrow. The MIRACLE network consists of the following institutions and companies:

- Amsterdam UMC, location Academic Medical Center (coordinator)
- Maastricht University, NL
- University of Lille, FR
- University of Eastern Finland
- University of Bonn
- BiomimX
- Katholieke Universiteit Leuven
- University of Bern
- AstraZeneca
- University of California San Diego
- NanoString
- Science Matters
- European Macrophage Dendritic Cell Society
- European Atherosclerosis Society

MIRACLE website url: www.miracle-dn.eu

Eligibility

Applicants can be of any nationality and must be Doctoral Candidates at the date of recruitment by University of Bonn and have not been awarded a doctoral degree. Furthermore, the applicant must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting beneficiary (Germany) for more than 12 months in the 36 months immediately before their recruitment date.

Renumeration

The per annum MSCA PhD student living and mobility allowance (plus family allowance if applicable, family status is assessed at recruitment) is in line with EU-MSCA requirements. This amount will be subject to tax and employee's National insurance deductions and will be paid in EURO.

How your data is kept

The data submitted in the Application Form will be used for recruitment purposes only and shared by members of the MIRACLE consortium. The data will be held securely at University of Bonn. Data is intended to be kept for a maximum of four years (the life-span of the program). Further information may be collected from the above-named institutes. Candidates can request deletion of their data by contacting info@miracle-dn.eu.

How to apply

Complete applications in English should include a motivation letter (max. 1 page), a CV, a brief statement of research experiences and interests, list of publications (if applicable) and addresses of two referees and should be submitted in one pdf file to Dr. Thomas Ulas (t(dot)ulas(at)uni-bonn(dot)de) with the application code "PhD-bioinformatics MIRACLE" **by 26th of January 2024.**