

The University Hospital Düsseldorf (UKD) is the largest hospital in the state capital and one of the most important medical centers in North Rhine-Westphalia. Around 9,300 employees at UKD and its subsidiaries ensure that more than 45,000 patients receive inpatient treatment each year and over 270,000 are treated on an outpatient basis. UKD stands for international excellence in patient care, research, and teaching, as well as for innovative and safe diagnostics, therapy, and prevention.

Patients benefit from the intensive interdisciplinary collaboration of 60 clinics and institutes. A particular strength of the university hospital is the close integration of clinical practice and research, enabling the safe application of new methods. At UKD, the medicine of tomorrow is being created—every day.

The Faculty of Medicine at Heinrich Heine University Düsseldorf is a leading center for research-driven medicine. Its projects and collaborations in basic and clinical research are funded, among others, by the German Research Foundation, federal and state ministries, and the European Union.

We are seeking, at the earliest possible date, for the **Interdisciplinary Cardiometabolic Imaging group within the Center for Cardiovascular Research in Diabetes (CARDDIAB)**:

1 Research Associate (m/f/d), full-time Fixed-term for 5 years

This is a qualification position in accordance with the German Academic Fixed-Term Contract Act (WissZeitVG, §2 (1)).

A central research focus of the group is the investigation of heart failure in ischemic cardiomyopathy in the context of disorders of glucose metabolism such as hyperinsulinemia, prediabetes, and diabetes mellitus. The aim is to non-invasively characterize metabolic changes in the myocardium and their interactions with metabolically active tissues such as epicardial and visceral adipose tissue.

The **Center for Magnetic Resonance in CARDDIAB (CMRC)** offers a unique platform for translational imaging, including:

- A clinical 3T and 7T MRI system
- Two 9.4T small-animal scanners
- Hyperpolarization technologies
- Comprehensive infrastructure for translational cardiometabolic research

This platform enables the development and application of imaging and spectroscopic methods from animal models to clinical use in humans.

By combining state-of-the-art magnetic resonance spectroscopy, cardiovascular imaging, and AI-based data analysis, new imaging markers of cardiometabolic dysfunction are to be identified.

Your responsibilities

The position focuses on the development and application of advanced MR-based methods for investigating the cardiometabolic system, including:

Metabolic MR imaging of the heart

- Development, implementation, and optimization of advanced MR spectroscopy methods (especially ³¹P and ¹H MRS) on a 3 Tesla MR system
- Investigation of cardiac energy and glucose metabolism in patients with ischemic cardiomyopathy
- Integration of metabolic imaging with structural and functional cardiac MRI
- Development of post-processing and analysis pipelines

AI-supported analysis of cardiometabolic imaging data

- Application of modern machine learning and AI methods to analyze large cardiovascular datasets
- Quantification of metabolically relevant tissues (e.g., epicardial and visceral fat)
- Integration of structural, functional, and metabolic parameters to identify new cardiometabolic biomarkers

What we expect?

- Completed university degree in natural sciences, engineering, or medicine
- PhD relevant to the advertised research areas
- Experience in magnetic resonance imaging or MR spectroscopy of the human heart
- Interest in translational cardiometabolic research

Desirable additional qualifications

- Experience in MR sequence development or MR data analysis
- Knowledge of image processing, data analysis, or machine learning
- Experience in scientific software programming

What you also bring

- Enthusiasm for new challenges
- Ability to work in a goal-oriented and solution-focused manner on complex problems
- Strong interpersonal and communication skills
- Excellent spoken and written German and English

What we offer

You can expect a diverse role with significant creative freedom in a dynamic and innovative team, with remuneration according to TV-L E13. We offer exciting opportunities for scientific collaboration and participation in and initiation of research projects.

The goal is the collaborative development of interdisciplinary cardiometabolic imaging within CARDDIAB at the interface of cardiovascular and metabolic/diabetes research. We also offer the opportunity to pursue a habilitation.

For questions regarding the position, please contact: Frau PD Dr. med. Mareike Cramer (EMail: mareike.cramer@med.uni-duesseldorf.de; Phone: +49 211-81 06932).

The employment contract will be concluded with Heinrich-Heine-University Düsseldorf. The Heinrich-Heine-University Düsseldorf seeks to increase the proportion of women in fields where they are underrepresented and therefore expressly encourages qualified women to apply. Women will be given preference if they have the same qualifications, skills, and professional achievements, unless there are compelling reasons related to a male candidate. The Heinrich-Heine-University is certified as a family-friendly institution and promotes the compatibility of academic/professional life and family life. Applications from qualified individuals with severe disabilities and those deemed equivalent under SGB IX are encouraged.

At Heinrich Heine University Düsseldorf, positions are generally also filled on a part-time basis, unless compelling operational reasons preclude this in individual cases.

Have we sparked your interest?

Then we look forward to receiving your detailed application with the usual documents within two weeks of this advertisement appearing with the reference number 321E/26 to the following address:

bewerbungen@med.uni-duesseldorf.de

oder

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