



The following position is available at the University of Duisburg-Essen at the Faculty of Medicine in the Institute of Experimental Immunology and Imaging in the Immunodynamics Research Group (Prof. Daniel R. Engel) as soon as possible:

**Researcher (Postdoc, E13 TV-L, 4 years)
for "Bioinformatics and artificial intelligence in medical imaging".**

(Salary according to TV-L 13 / 100% - temporary position for 4 years)

Within the framework of the DFG-funded Collaborative Research Center CRC332 "Neutrophils: Origin, Fate and Function", a scientifically proven personality (scientist or clinician scientist) with profound knowledge in the field of bioinformatics is sought for the central project "Visualization neutrophils in context". The position aims to interface imaging datasets from microscopy and mass spectrometry with bioinformatics algorithms. Outstanding expertise in algorithms for the analysis of microscopic datasets and the development of bioinformatics algorithms for the registration of datasets from microscopy and spatial mass spectrometry is expected. Furthermore, expertise in artificial intelligence and biological interpretation of the findings via systems biology approaches is expected to decipher immunological mechanisms in diseases and develop novel therapeutic applications to cure diseases.

Further information about the research group and current research projects: www.immunodynamics.de

Your tasks:

- Automated analysis of microscopic datasets using bioinformatics algorithms.
- Analysis of data sets from liquid chromatographic mass spectrometry (LC-MS/MS) and imaging matrix-associated laser desorption/ionization mass spectrometry (MALDI-MSI)
- Establishment of bioinformatics algorithms for registration of multimodal data sets from microscopy and MALDI-MSI
- Univariate and multivariate analyses and visualization of results (principal component analysis, t-sne, UMAP)
- Integrative assessment of data using "pathway" and "enrichment" analysis
- Establishment of machine learning algorithms to identify patterns in mass spectrometry and microscopy data sets
- Supervision of undergraduate and graduate students

Your profile:

- PhD or MD with expertise in bioinformatics, mass spectrometry, microscopy, artificial intelligence and systems biology.
- Expected skills
 - Outstanding expertise in algorithms for the analysis of microscopic data sets
 - Development of bioinformatics algorithms for registration of data sets from microscopy and spatial mass spectrometry
 - Expertise in the field of artificial intelligence
 - Biological interpretation of findings via systems biology approaches



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- Desirable knowledge
 - Analysis of LC-MS/MS and MALDI MSI data sets
 - Machine learning algorithms
 - Knowledge of the following software and databases: Cytoscape, ScisLab, DAVID, String, GSEA
- You work independently on your own responsibility and reliably
- You are flexible, committed and a team player
- You have very good computer and English skills

Severely disabled applicants and those with equal status as defined by Section 2 (3) of the German Social Code IX (SGB IX) will be given preferential consideration in cases of equal suitability. The University of Duisburg-Essen aims to increase the proportion of women among its academic staff. Women will be given preferential consideration in the case of equal aptitude, qualifications, and professional performance, provided that reasons relating to the applicant do not prevail. The classification is based on the personal and collective bargaining requirements. Employment is initially limited to a period of 4 years. Extensions are possible, among other things, if third-party funds are available in accordance with the maximum employment periods of the Wissenschaftszeitvertragsgesetz (WissZeitVG).

Please send your application documents within 2 weeks after publication of this advertisement with reference to the job title primarily by e-mail in one coherent PDF file to application@immunodynamics.de or in writing to

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We will use your data exclusively for application purposes in accordance with the applicable data protection regulations.

You can find further information in the data protection declaration on our homepage at: www.uk-essen.de