PostDoc (m/f) in Computational Biology

The University of Bonn is an internationally operating research institution with a broad spectrum of subjects. With 200 years of history, around 38,000 students, more than 6,000 employees and an excellent reputation at home and abroad: the University of Bonn is one of the most important universities in Germany. In the last excellence initiative, the University of Bonn was able to secure six Clusters of Excellence, more than any other German institution, for research topics including mathematics, immunology, dependency research, robotics, economics to quantum physics.

In this excellent scientific environment, the Interdisciplinary Research Unit *Mathematics and Life Sciences* ([https://www.mathematics-and-life-sciences.uni-bonn.de/en](https://www.mathematics-and-life-sciences.uni-bonn.de/en)) develops and applies novel mathematical approaches and software tools for data analysis and modeling. The spectrum of applications spans oncology, immunology, and epidemiology. We are intensively collaborating with world-leading experts for mathematics and immunology at the *Hausdorff Center for Mathematics, ImmunoSensation*	extsuperscript{2}, and the *German Center for Neurodegenerative Diseases (DZNE)*. Currently, we are searching for three PostDocs to complement our interdisciplinary team and to work on one of the following projects:

- **ORCHESTRA**: This European project with 25 partner institutions establishes a multi-center cohort of COVID-19 patients – a unique data source – and aims to assess, for example, risk factors, comorbidities, and the effectiveness of intervention and vaccination strategies. We lead the data analysis and will develop and apply federated statistical and machine learning methods. (1 PostDoc position)

- **METAINFLAMMATION**: This interdisciplinary project focuses on the response of the immune system and metabolism to the Western lifestyle which causes chronic, low-grade inflammation, also known as metaflammation. As the central computational biology unit, we will interact with over 20 subprojects and work on data analysis, integration and modeling. (2 PostDoc positions)

The open projects will focus on:

- federated and swarm learning to analyze comprehensive patient datasets
- statistical and bioinformatic data analysis, and development of novel methods
- data management and integration


**Job description:**

- Data management, statistical analysis and/or mathematical modeling of biological data (e.g. single-cell omics, high-throughput and patient data)
- Development of statistical inference and machine learning methods
• Interpretation of analysis results
• Collaboration with biologists and medical researchers
• Publication of scientific results at conferences and in journals
• Co-supervision of students

Your profile:

• PhD degree in (bio-)informatics, computational biology, computer science, mathematics or equivalent
• Strong experience in at least three of the following topics: Bioinformatics, statistics, mathematical modeling (ODEs, Markov jump processes or similar), machine learning, and data management/integration
• Programming skills (e.g., R or Python)
• Proficiency in written and spoken English
• Passion for science and scientific work

Our offer:

• Working in an innovative, well-equipped and scientifically stimulating environment
• Further training opportunities
• Initial fixed-term employment contract for 3 years with a standard public service salary (100% TV EntgO Bund EG 13)

The University of Bonn is committed to diversity and equal opportunity. It is certified as a family friendly university. It aims to increase the proportion of women in areas where women are under-represented and to promote their careers in particular. It therefore urges women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable individuals with a certified serious disability and those of equal status are particularly welcome.

The deadline for the application round is **March 30, 2021**. Application documents (cover letter, CV, certificates, two references) should be submitted as soon as possible as a single PDF file via email.

Contact: **Prof. Dr. Jan Hasenauer, jan.hasenauer@uni-bonn.de**