

For the Research Group in Statistics at the Institute of Economics (ECON-STAT), we are currently seeking to recruit, starting September 1st 2023, limited to three years, a

Research associate (f/m/d) **Statistical forecasting of infectious disease spread**

Infectious disease outbreaks pose a threat to public health and can have disruptive effects on societies. Surveillance of these diseases gives rise to diverse and continuously updated data streams. To draw valid conclusions from these in real time, specialized mathematical and statistical modeling tools are necessary.

The proposed project is focused on the development of new statistical methods to generate, evaluate and combine infectious disease nowcasts and short-term forecasts. The developed methods will be implemented in open-source software packages and applied in real time to various pathogens. Forecasts can e.g., refer to the number of required hospital or intensive care beds. For different parts of the project, collaborations with partners in the United Kingdom and the United States are planned.

A specific focus will be on methods for multi-model forecasting. There is a growing consensus that disease forecasting should be based on several different models rather than just one. This is reflected in the creation of numerous so-called Forecast Hubs, e.g., by the European Center for Disease Prevention and Control ([covid19forecasthub.eu](https://www.ecdc.europa.eu/en/covid19forecasthub)). The planned projects shall contribute to and build upon the modeling work taking place in such open collaborations.

The position will be part of a newly established DFG Emmy Noether Junior Researcher Group ("Multi-Model Nowcasting and Short-Term Forecasting of Infectious Disease Spread") led by Dr. Johannes Bracher.

The position is suitable for PhD studies. The planned PhD supervisors are Principal Investigators in the Helmholtz Information and Data Science School for Health (www.hidss4health.de/), and we intend to associate doctoral candidates with this graduate school.

The ideal candidate (f/m/d) should have a Master's degree in mathematics (with specialization in statistics), (bio-) statistics or epidemiology. A degree in another quantitative discipline (e.g., computer science, economics, engineering, physics) may be suitable in combination with excellent knowledge in statistics, proven by past coursework. You should have a strong interest in statistical modeling, computational statistics and applications in medicine and public health. Programming skills in R or Python are required and should be documented by past projects (e.g., public code repositories). Fluency in written and spoken English is a prerequisite (English is the main working language). We are looking for a highly motivated candidate (f/m/d) with a strong commitment to research ethics and teamwork. Good communicative skills are mandatory due to the interdisciplinary structure of the project.

Salary: Salary category 13, depending on the fulfillment of professional and personal requirements.

We prefer to balance the number of employees (f/m/d). Therefore, we kindly ask female applicants to apply for this job.

Recognized severely disabled persons will be preferred if they are equally qualified.

Please send a CV, transcript of records from your MSc studies and a short motivation letter (max. 1 page) stating your research interests to Dr. Johannes Bracher, johannes.bracher@kit.edu. Please send all documents as a single PDF file named "application_<your last name>.pdf". If you have written a Master's thesis involving statistics feel free to send it as a separate file (max. 10MB).

vacancy number: 2104/2023 – application up to June 30, 2023.

Further details can be found on our website: www.kit.edu.
Job advertisement on our website: <https://www.pse.kit.edu/english/karriere/joboffer.php?id=132323>

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