

## Postdoctoral Researcher (f/m/d): Spatio-temporal epidemiological modeling of COVID-19

The [Center for Advanced Systems Understanding \(CASUS\)](#) is a German-Polish research center for data-intensive digital systems research. We combine innovative methods from mathematics, theoretical systems research, simulations, data science, and computer science to provide solutions for a range of disciplines – materials science under ambient and extreme conditions, earth system research, systems biology, and autonomous vehicles.

CASUS was jointly founded in August 2019 by the [Helmholtz-Zentrum Dresden-Rossendorf](#), the [Helmholtz Centre for Environmental Research](#), the [Max Planck Institute of Molecular Cell Biology and Genetics](#), the [Technical University of Dresden](#) and the [University of Wrocław](#). CASUS is located in the heart of Görlitz at the border between Germany and Poland. The CASUS start-up phase is hosted by the Helmholtz-Zentrum Dresden-Rossendorf and is financed by the [Federal Ministry of Education and Research](#) and the [Saxon State Ministry of Science and Art](#).

The Earth System Science department is looking for a postdoctoral researcher interested in developing and parameterizing spatially explicit models of COVID-19 spread within Saxony and Germany.

Location of work is Görlitz, the working hours will amount to 39 h per week.

The position will be available from now. The employment contract is limited until 31.12.2022.

### The Scope of Your Job

The postdoctoral researcher will be part of a team studying how to optimally deploy limited testing capacity in an emerging epidemic. This position will focus on developing epidemiological models with at least county-level resolution, initially for the state of Saxony, and subsequently for all of Germany and possibly other countries. These models must account for interconnections among spatial units and thus must go beyond location-specific but otherwise independent models. The successful candidate will analyze the behavior of the models, couple them with extensive data compiled within the project and by project partners, and use the models to create scenarios that can be used as a backdrop to evaluate the performance of methods for optimizing limited testing resources in an emerging epidemic.

### Your Tasks

- Developing spatially coupled COVID-19 models, first for Saxony and subsequently for the rest of Germany;
- Analyze the behavior of the models use them to understand how more efficient testing can change the course of an emerging epidemic;
- Develop scenarios that can be used to evaluate the performance of different approaches to optimizing testing locations, strategies, and priorities.
- Work with our team to facilitate a coordinated approach to optimizing testing locations and strategies;
- Publish your results in academic, peer-reviewed journals;
- Present your results at scientific meetings

### Your Qualifications

- Ph.D. in epidemiology, mathematical biology/ecology, physics, mathematics, or a related field;
- A solid background in mathematical modeling and interfacing models with data;
- Excellent programming skills in languages such as R and Python;
- Strong motivation to work in a collaborative environment;

- Excellent communication skills in English and in a professional context (presentation of research results at scientific meetings, colloquial discussions, preparation of manuscripts).
- Evidence of the ability to publish results in top peer reviewed journals;

### What We Offer

- A vibrant research community in an open, diverse, and international work environment
- Scientific excellence and extensive professional networking opportunities
- The employment contract is limited to three years with the possibility of longer-term prospects
- Salary and social benefits in conformity with the provisions of the Collective Agreement TvöD-Bund
- 30 vacation days per year
- Company pension scheme (VBL)
- A good work/life balance for which we offer assistance in the form of:
  - Possibility to work part-time
  - Flexible working hours
  - In-house health management

### Application

Please submit your application (including a one-page cover letter, CV, academic degrees, transcripts, etc.) online on the HZDR application portal:

<https://www.hzdr.de/db/Cms?pNid=490&pOid=61401&pContLang=en>

### Deadline:

Review of applications will begin on 24 August 2020, but the position will remain open until filled.

### For details please contact:

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