



The Luxembourg Institute of Socio-Economic Research (LISER)

is recruiting a

Fully Funded PhD Researcher in Neighborhoods and Health (f/m/d)

- Ref: 23-08
- Fixed-term working contract for 36 months (extendable up to 48 months upon conditions), in the framework the *'FragMent'* project
- Full-time/40 hours per week
- Work contract at LISER, Urban Development and Mobility Department (UDM)
- Start date: September 1st, 2023 at the latest
- EU research framework program: Horizon ERC Starting Grant 101040492

LISER invites highly qualified and motivated applicants for a **PhD position** in the Urban Development and Mobility Department (UDM), under a project funded by the European Union, through *Horizon European Research Council (ERC) Starting Grant program*.

About the *FragMent* project

Geographic environments, daily activities and stress: a study on the space-time fragmentation of exposure patterns.

Stress is nearly ubiquitous in everyday life, and act as a major risk factor of numerous mental and physical disorders. The aim of the *FragMent* project is to evaluate to which extent the spatial and temporal fragmentation of exposures to environments in daily life influences physiological and psychological stress, as well as social inequalities in stress.

Engaging in daily activities translates into travelling to and staying within a variety of environments over a day. Exposures to daily environments may either act as a contributor to stress or provide some restorative qualities. For example, while greener environments reduce stress, higher built-up density and proximity to traffic do the reverse. Yet, the combination of these momentary effects on stress over a day have so far been largely ignored. *This project* builds on a corpus of evidence from neighborhood effect in epidemiology, and creates a bridge with the concept of activity fragmentation from Time Geography, to investigate the determinants of momentary, daily and chronic stress.



Your Role

Leading the research effort on the identification of vocal biomarkers of stress and examine the effects of the urban environments and exposure patterns on momentary and daily stress.

This sub-project in *FragMent* aims to assess the impact of urban environment, exposure patterns and activity patterns on momentary, daily and chronic stress in daily life. We will rely on an observational cross-sectional study collecting information on both self-reported psychological stress measurements and physiological measurements based on vocal biomarkers of stress. Using map-based questionnaires, this study will collect information of individual's regular mobility and activity patterns, to be correlated with chronic stress. In addition, we will make use of Geographically explicit Ecological Momentary Assessment combining GPS data with repeated assessment of participants' momentary stress, activity patterns, and environmental perceptions over 15 days, in order to accurately capture participants' activity space.

The successful candidate will be expected to contribute to the *FragMent* project as described above and will be in charge of running analyses on the environmental correlates of momentary and daily stress. An important phase will be the identification of vocal biomarkers of stress using machine learning methods. To this end, the successful candidate will be hosted at the Luxembourg Institute of Health (LIH) to build core knowledge and methods of the identification of vocal biomarkers.

Supervision team

Dr. Camille Perchoux is a research associate at the Luxembourg Institute of Socio-Economic Research (LISER), department of Urban Development and Mobility (UDM). She is a health geographer with a background in geography and a PhD in Public Health Epidemiology awarded in 2015 from Sorbonne University and the University of Montreal. Her research interests include the assessment of neighborhood effect on health at refined spatial and temporal scales, social and spatial inequalities in health, and longitudinal effects of environments on health. Her research involves the use interdisciplinary concepts, methods and tools from epidemiology, geography and transportation research including map-based questionnaires, GPS, (bio)sensors, mobile surveys and virtual reality technology. She is the Principal Investigator of the *FragMent* project.

Dr. Guy Fagherazzi was appointed Research Leader of the "Deep Digital Phenotyping" Research Unit, a new strategic position at LIH's Department of Population Health. He is a senior research scientist in digital epidemiology with a strong expertise in diabetes as well as in the analysis of large population-based studies using Artificial Intelligence (AI) methods. First trained in Mathematics, he has obtained a double Master Degree in Statistics and in Epidemiology. He has started to work on diabetes epidemiology during his PhD on large French and pan-European population based cohort studies. During his postdoctoral period, he has spent two research stays as a Visiting Scientist and initiated a collaboration still ongoing with the Diabetes and Population Health unit at the Baker Heart and Diabetes Institute in Melbourne. He is the Principal Investigator of the World Diabetes Distress Study, a worldwide open research initiative on the use of social media data and artificial intelligence (AI) methods at the service of modern diabetes epidemiology and of the future CoLive study promoted by the Luxembourg Institute of Health.



Your Profile

The successful candidate is expected to have:

- A **Master** in a relevant discipline such as **geography, public health, epidemiology, data sciences applied to health, bioinformatics or biostatistics**;
- Knowledge in quantitative research methods;
- Advances skills for data management and statistics;
- Experience with Machine learning technics;
- Advanced skills for writing scientific peer-review papers in English;
- Advanced skills for presenting research results to scientific conferences and to a lay audience;
- Skills in French, German or Luxembourgish would be an asset, but not mandatory;
- Good organizational skills, good communication skills;
- Ability to take own initiatives, as well as a strong ability for teamwork.

LISER particularly encourage female candidates to apply

We offer

- An exciting interdisciplinary research environment combining geography, public health epidemiology and experimental sciences;
- An international supervision team and associated research network;
- Local training programs, comprising specific training courses in research-related skills and well as training in complementary skills;
- Additional training and networking opportunities through participation in international conferences;
- An internationally competitive remuneration.

About LISER

[LISER](#) is a publicly funded research institute located in Luxembourg and dedicated to applied empirical research in economic, social and spatial sciences. Multi- and interdisciplinarity is a key element for stimulating scientific innovation. The Institute attracts top researchers from all over the world and high-level student training is a vibrant part of the institute's activities. The institute's staff consists of about 180 employees (including a survey and data center), more than 50% of the staff being researchers, mainly from the fields of economics, sociology, and geography. The working languages at the institute are French and English.

The Institute is located on the [Belval campus](#) in the south of Luxembourg, which hosts the [University of Luxembourg](#) and a substantial part of the country's publicly funded research facilities, i.e. LISER, the Luxembourg Income Study ([LIS](#)) cross-national data centre, the Luxembourg Institutes of Health ([LIH](#)) and of Science and Technology ([LIST](#)). The University has outstanding high-performance computing facilities available for use by associated researchers in the Luxembourg Institutes. Information for foreign researchers interested in Luxembourg research is accessible via the national [EURAXESS](#) platform.



About Luxembourg

Luxembourg, with its 600,000 inhabitants, is one of the wealthiest countries in the world and provides a stimulating mixture of modern culture and tradition. In addition to excellent health, education (public, private and high level international schools) and recreational services, the community offers a rich variety of cultural activities, museums, music, art and theatre. Luxembourg is a multi-lingual nation. Besides the official languages (French, German and Luxemburgish), English, Italian and Portuguese are spoken frequently.

Application process

Please submit your complete application (in English) via <https://jobs.liser.lu/jobs> before **April 30th, 2023** including the following documents :

- Curriculum Vitae;
- Letter of motivation (maximum 1 page);
- A suggestion for specific research questions related to the project's theme (1/2 A4);
- Writing sample (e.g. student's paper or chapter thesis), preferably in English;
- Copy of the diplomas and grades (i.e., bachelor and master degree, or equivalent). The minimum requirement is a diploma qualifying for doctoral studies in the recruiting country (e.g. Master degree). *Students in their last year may apply but can only be recruited upon successful graduation;*
- Contact details of two referees (no recommendation letters).

Deadline for applications: April 30th, 2023

If you have any questions on **the content of the work**, please contact Dr. Camille Perchoux camille.perchoux@liser.lu or Dr. Guy Fagherazzi guy.fagherazzi@lih.lu

For **administrative matters**, please contact: recruitment@liser.lu

LISER is equal opportunity Employer