Schweizerische Eidgenossenschaft
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Federal Department of Economic Affairs,
Education and Research EAER

Agroscope

Agroscope Job Advertisement

Position

PhD student for the 'Metabolic Nutrient Profiling' project

Introduction

Malnutrition is a major cause of morbidity and mortality throughout the world. Understanding the impact of diet on human health is nevertheless an arduous task for researchers owing to the difficulty of documenting consumer food intake in an objective and precise manner and given the complexity of the molecular interactions between foods and the human organism. Despite this, recent developments in analytical sciences – in particular, biomarker research using metabolomics, and bioinformatics, including artificial intelligence – are revolutionising nutritional research by facilitating the integrated acquisition and analysis of large quantities of dietary and metabolic data. This systemic nutrigenomics approach promises to better highlight the links between health and nutrition.

Tasks

Your tasks in the 'Metabolic Nutrient Profiling' (MNP) project will involve highlighting, in collaboration with the MNP project team, the interactions between foods – in particular, fermented foods – and health, through the analysis of nutritional data, the urinary metabolome and the clinical profile – specifically, the formation of kidney stones. In particular, the following hypotheses will be tested:
- Urinary metabolome profiles can identify participants developing kidney stones.
- The participants' dietary habits are reflected in their urinary metabolome.
- Specific food-intake biomarkers are modulated by the participants' health status.
- The dietary habits of the participants developing kidney stones can be predicted by the urinary metabolomic markers.
To this end, an integrated analysis of the available data will be conducted to highlight the clinical and nutritional relevance of the findings in a sustainability context. Based on the profile of the successful candidate, some of the metabolomics measures (gas (GC-MS) and liquid (LC-MS) chromatography mass spectrometry) will be included in the dissertation work.

Your Qualifications

- MSc in a life science, data science and/or analytical chemistry
- Basic training in biostatistics and data management
- Strong interest in clinical and human nutrition data analysis using statistical and bioinformatic tools ('big data analysis'), ideally with preliminary experience of R
- Very good communication skills and team spirit
- Very good knowledge of a second official Swiss language and of English (the workplace language)

Information on the Employer

Agroscope is the Swiss Confederation's centre of excellence for research in the agriculture and food sectors. Its researchers carry out their activities at various sites in Switzerland. Headquarters are in Bern-Liebefeld. Agroscope is affiliated with the Federal Department of Economic Affairs, Education and Research EAER.

The thesis will mainly be conducted in the Functional Nutritional Biology Research Group in Bern-Liebefeld, in close collaboration with the Department of Epidemiology and Health Systems of the University Centre for General Medicine and Public Health Unisanté. The thesis will be conducted under the supervision of Prof. Murielle Bochud (University of Lausanne).

We offer you an interesting job in a dynamic team, a modern work environment, flexible working hours and good employee benefits.

Place of Work	Schwarzenburgstrasse 161, 3003 Liebefeld (anticipated workplace from end of 2024: 1725 Posieux)
Salary Category	According to the Swiss National Science Foundation salary scale
Employment Level	80-100%

Contact

If you are interested in taking up this challenge and meet the requirements profile, please do not hesitate to send us your application in English, including 2 to 3 references, to www.stelle.admin.ch, ref. no. 48073.

Agroscope will be closed from 24 December 2021 to 2 January 2022. Applications will not be processed during this period.

For more information, please contact PD Dr Guy Vergères, Head of the Functional Nutritional Biology Group, by email at guy.vergeres@agroscope.admin.ch or by telephone on +41 58 463 81 54 (please do not send applications to this email address).

Deadline for submitting applications: 03.01.2022

Start date: 01.03.2022, or to be agreed.

This post is for a fixed term of 3 years, but could be extended by one year if necessary.