Soil Microbiome Physiology and Microbial Interactions under Global Warming

We are looking for a highly motivated PhD student in the frame of EU-funded Marie Sklodowska-Curie Innovative Training Network (MSC ITN) FutureArctic, a training network at the ForHOT natural soil warming laboratory. You will be part of a group of 15 early stage researchers (ESRs) and will be working at TER, the Terrestrial Ecosystems Research Group at the Centre of Microbiology and Environmental Systems Science, University of Vienna.

That’s what you are going to do
The goal of the PhD project is to elucidate in-situ metabolic capacities and life-history traits of microbial taxa and their possible change in a future climate. Individual-based microbial community modelling can then be used to explore interactions among microbial groups and their response to warming. To achieve this, you will quantify how physiological responses of individual microbial taxa to warming will alter soil carbon cycling. You will make use of the iChip technology to isolate microbial taxa in their natural environment and develop new techniques to estimate their growth and turnover rates, enzyme activities and nutrient scavenging capabilities based on isotope labelling (qSIP and NanoSIMS) and next generation sequencing. You will extensively use and develop a range of advanced stable isotope 13C, 15N and 18O tracer techniques, based on isotope ratio mass spectrometry (IRMS) and secondary ion mass spectrometry (NanoSIMS). You shall also use an existing mathematical model to investigate how climate change affects microbial interactions.

Join an exciting research environment
Your PhD will be based at the University of Vienna at the Centre of Microbiology and Environmental Systems Science, one of the leading research institutions in its field in Europe. You will join a lively, intellectually stimulating and collaborative research group and be part of a cosmopolitan and vibrant research department with about 180 members. You will be supervised by Prof. Andreas Richter and Prof. Christina Kaiser, who lead and co-lead the Terrestrial Ecosystem Research Group.
You will be part of the EU Innovative Training Network (ITN) FutureArctic, that offers a training at the inter-sectoral edge of environmental science, computer science, artificial intelligence, and social sciences.

Who should apply?
We are looking for a highly motivated PhD student with a Master degree in microbiology, ecology, biology, soil science or similar and a solid background in one of the following areas: microbial ecology (e.g., next generation sequencing and data analysis and isolation of microbial strains from environmental samples), biogeochemistry and/or ecosystem ecology (focusing on soils) and mathematical modelling. As part of a larger research team, we expect you to have excellent communication skills and to be fluent in English. A good knowledge of techniques in molecular microbiology is essential. Additional knowledge in mathematical modelling and experience in the application of stable isotopes is desirable.
The following rules for EU training networks apply:

H2020 MSCA Mobility Rule: researchers must not have resided or carried out their main activity (work, studies) in the country of the host organisation (Austria) for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status are not taken into account.

H2020 MSCA Eligibility Criteria: Early Stage Researchers (ESRs) must, at the date of recruitment by the host organization, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Full-Time Equivalent Research Experience is measured from the date when the researcher obtained the degree entitling him/her to embark on a doctorate (either in the country in which the degree was obtained or in the country in which the researcher is recruited, even if a doctorate was never started or envisaged).

Application procedure
Your application should include a
(i) CV and list of publications, if applicable,
(ii) letter explaining your motivation, experience and skills (2 pages maximum)
(iii) contact details of the supervisor of your Master thesis and of possible references

Please, send your application in one file (preferably as PDF) to Christof Oberwalder (christof.oberwalder@univie.ac.at). We will screen applications as they come in.

Latest starting date is June 1st, 2020.

For further information and informal discussion, please contact Prof Andreas Richter (andreas.richter@univie.ac.at) or Prof Christina Kaiser (christina.kaiser@univie.ac.at).