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## PHD STUDENT VACANCY

### MIGRATION, DIET AND HEALTH OF THE FIRST PERMANENT SETTLERS OF BELGIUM: AN ISOTOPIC PERSPECTIVE

The Isotope Bioscience Laboratory (ISOFYS) within the Department of Green Chemistry and Technology of Ghent University (UGENT, Belgium) is recruiting a new PhD student. The PhD student will be engaged in the GOA project 'Migration, diet and health of the first permanent settlers of Belgium: Inter and multi-disciplinary perspectives' (ROAM, Regional Outlook on Ancient Migration) recently funded by the special research fund (BOF) of Ghent University. The overall aim of the GOA project is to generate regional-scale insights into the lifeways of the first modern humans to settle permanently in Belgium during the final Paleolithic and Mesolithic. It achieves this through multi- and inter-disciplinary analysis of contextualised data from archaeological, palaeontological and anthropological assemblages whilst developing state-of-the-art analytical techniques in the fields of proteomics and stable isotope analysis. This work will be performed in collaboration with Prof. dr. Isabelle de Grote from the Department Archaeology and Prof. dr. Frank Vanhaecke from the Department of Chemistry at UGHENT.

#### CONTEXT

The lifeways of modern humans as hunter-gatherers in between the final Palaeolithic (Late Glacial) and Mesolithic (Early Holocene) is a crucial phase for better understanding the permanent re-colonization of northern Europe after the last ice age. The Belgian middle-Meuse valley is an ideal region along the North Sea basin to study human displacements and adaptations during the final Paleolithic and Mesolithic, as there is a unique fossil assemblage within NW Europe (mainly dating back to the Mesolithic period). Little is known about these last hunter-gatherers: where they came from, who they were, and how they lived? For answering these questions, an inter- and multi- disciplinary research is crucial, and aimed at in the ROAM project. Within this specific research, the use of isotope ratios (such as  $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ,  $\delta^{34}\text{S}$  and  $^{87}\text{Sr}/^{86}\text{Sr}$  isotope ratio) are an interesting approach in this context for revealing new insights. Isotopic analysis of the light elements will be performed in the ISOFYS (head by Prof. Pascal Boeckx) and Sr isotopic analysis in the AM&S research group (head by Prof. dr. Frank Vanhaecke).

#### JOB DESCRIPTION

The PhD will contribute to method development/evaluation, analysis of various types of archeological (human and animal samples) for bulk ( $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ,  $\delta^{34}\text{S}$  and  $^{87}\text{Sr}/^{86}\text{Sr}$  isotope ratio) and compound specific isotopic analysis ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ) and data treatment and interpretation. The PhD student will 'team up' with staff members (2 PhDs, 2 post-docs and 5 professors) from the ROAM project. Isotopic transferred signals will be used for the paleodiet reconstruction of Mesolithic inhabitants of the middle Meuse valley based on: 1) a complete isotopic baseline database of collagen and bioapatite from potential food source and human remains, 2) isotopic corrections for edible food fractions in food sources and isotopic signature of the macronutrient diet consumed, and 3) a combination of recent advances in Bayesian mixing models. Also, the study of trophic levels and food consumption *via* compound specific stable isotope analyses and mixing models will be investigated. The scientific data will be published in scientific journals, but also disseminated to various local stakeholders.

#### PROFILE

- Hold a relevant Master degree
- Strong interest in multidisciplinary and analytic research in relation to archeology

- Open and collaborative attitude
- Prepared to take initiative, but also to work in close collaboration with other team members and international partners
- Prepared to participate in (inter)national conferences and symposia

#### **SKILLS**

- Excellent organization, communication (both oral and written) and social skills
- Capable of developing, planning, and organizing your own research work and meeting deadlines imposed by the project
- Good insights in analyzing and interpreting data
- Knowledge of statistical processing of data
- Experience of working in an (archaeological) isotope laboratory
- Good knowledge of English (written and spoken)

#### **WE OFFER**

- A fully funded full-time 4-year position as a PhD-student at UGENT (start March 2022)
- A dynamic, challenging, and stimulating research environment
- Free public commuting and/or bike fee

#### **CONTACT DETAILS**

If interested, please send your motivation letter, CV (including references) and a copy of your MSc diploma, with reference “**ROAM-ISO-PhD**” before January 30, 2022 to Prof. Marta Costas-Rodriguez ([Marta.costastodriguez@ugent.be](mailto:Marta.costastodriguez@ugent.be)) and Saskia Van der Looven ([Saskia.vanderlooven@ugent.be](mailto:Saskia.vanderlooven@ugent.be)).

For more information:

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Isotope Bioscience Laboratory: [www.isofys.ugent.be](http://www.isofys.ugent.be)

Only applications that meet the profile and that are received in time will be taken into consideration.