

The research group
Archaeology, Environmental Changes & Geo-Chemistry

has the honor to invite you to the public defence of the PhD thesis of

Jacob I. Griffith

to obtain the degree of Doctor of Sciences

Title of the PhD thesis:

**The Truth in the Tooth: Reconstructing and Comparing Human
Life Histories in the Mesolithic and Neolithic of Europe**

Curriculum vitae

Supervisor:
Prof. dr. Christophe Snoeck (VUB)
Co-supervisor:
Prof. dr. Barbara Veselka (VUB)

The defence will take place on
Friday, October 9, 2026 at 4 p.m.

Promotiezaal D.2.01, VUB Etterbeek campus,
Pleinlaan 2, Elsene

Members of the jury

Prof. dr. Steven Goderis (VUB, chair)
Dr. Hannah F. James (VUB)
Prof. dr. Ralf Vandam (VUB)
Prof. dr. Alice Toso (Universität Bonn, DE)
Dr. Tamsin O'Connell (University of Cambridge, UK)
Prof. dr. Rick Schulting (University of Oxford, UK)

After completing his BSc and MSc in Archaeological Science at Cardiff University, Jacob began his PhD within the ERC-funded LUMIERE project under the supervision of Prof. Dr Christophe Snoeck. In his first year, he was awarded a personal FWO doctoral fellowship for his project, *The Truth in the Tooth*.

His research combines method development with incremental isotope sampling of teeth to reconstruct the life histories of archaeological and forensic individuals. His work has resulted in three first-author publications in *PLOS ONE*, *Forensic Chemistry*, and the *International Journal of Palaeopathology*. He has also presented at several international conferences and co-supervised five Master's students during his PhD.

Abstract of the PhD research

Over the last three decades, isotopic analyses of human remains have become fundamental tools within the archaeological field. These methods have revolutionised our understanding of diet, mobility, and provenance of past populations, especially in prehistoric contexts, where no written record exists. Previously, isotopic analyses have been constrained by limiting factors, the most notable being their representation of an individual's isotopic record from a singular sample, a unique moment in their lives. This representation assumes that diet and geographic residence were consistent throughout an individual's lifetime, leaving the identification of important changes in mobility and subsistence undetectable.

This thesis addresses this limitation by developing and refining high-resolution incremental isotopic (C, N, O, Sr) methods applied to human dental and bone tissues. Crucially, this research develops and standardises incremental enamel sampling methods for human canines and molars, enabling high-resolution reconstructions of childhood mobility and diet. Secondly, the project refines established incremental dentine methods by demonstrating their successful application to dentine affected by developmental disruptions and pathologies. Lastly, this thesis assesses the feasibility of strontium isotope analysis on bone collagen to determine whether accurate adult-life mobility reconstructions from inhumed human remains can be acquired and directly integrated with childhood isotope records to recreate mobility histories across an individual's entire life.

This thesis also aims to reconstruct detailed life histories of individuals from across selected areas of Mesolithic and Neolithic Europe, integrating these methodological advancements with well-established isotope and bioarchaeological techniques. To achieve this, individuals from three regionally significant archaeological sites are studied: Abri des Autours (Belgium), Zvejnieki (Latvia), and Legaire Sur (Spain). These sites represent the emergence of Neolithic lifeways within different environmental and cultural regions, providing an opportunity to investigate how patterns of diet, mobility, and human lifeways varied across Europe.

Overall, this thesis advances incremental isotopic methods for the archaeological, forensic, and wider scientific fields. Further, it provides new high-resolution insights into Mesolithic and Neolithic lifeways from across Europe that would have otherwise remained lost to time.