PhD studentship in Biogeochemistry

Elucidating Water Metabolism in Ruminant Animals Using Compound-Specific Hydrogen Isotope Approaches

Main supervisor: Dr Mélanie Roffet-Salque
Organic Geochemistry Unit, School of Chemistry, University of Bristol

Second supervisor: Professor Michael Lee
Bristol Veterinary School, University of Bristol and Rothamsted Research at North Wyke

This fully-funded 4-year PhD studentship offers a unique opportunity to carry out interdisciplinary research at the University of Bristol. The studentship is funded by a Royal Society grant to Dr Mélanie Roffet-Salque. This research will be carried out in collaboration with the BBSRC’s North Wyke Farm Platform together with the World University Network (WUN) Global Farm Platform.

Project Description

Although water is fundamental to all life the quantitative role of the hydrogen in water in the metabolism of animals is very poorly understood. Indeed, despite their economic importance there have been no systematic studies of the relationships between water, feed and animal tissue H signals at the molecular level in ruminants or any other mammals.

This PhD studentship is an exceptional opportunity for a student who wishes to combine their interests in analytical chemistry with biology/biochemistry/veterinary science to gain fundamental insights into the routing of hydrogen from feed and drinking water to ruminant tissues at the molecular level. Novel deuterium-labelled tracer techniques will be used to follow the fate of water into tissue biochemicals using state-of-the-art gas chromatography-thermal conversion-isotope ratio mass spectrometry methods.

This study of modern animals will change our understanding of water use in biochemistry and animal energetics, providing critical insights into animal adaptation to warmer climate.

The student will become a member of the Organic Geochemistry Unit at the University of Bristol and work in close collaboration with the Bristol Veterinary School and Rothamsted Research at North Wyke (which includes the BBSRC North Wyke Farm Platform National Capability). The supervisory team will include researchers from both Schools at the University of Bristol.

How to apply

Please make an online application for this project using the postgraduate application system http://www.bris.ac.uk/pg-howtoapply. You will be prompted to enter details of the studentship in the Funding and Research Details sections of the form.

Candidate requirements: Candidates should possess a degree in a relevant subject area, such as a 2:1 or higher in animal science, chemistry or a related discipline aligned to the studentship.

We encourage you to make an informal enquiry to Dr Mélanie Roffet-Salque (melanie.salque@bristol.ac.uk) to discuss the project.

Closing date: 01/07/2019

Funding Notes

Successful applicants will receive a studentship to cover UK/EU tuition fees, a stipend (£14,777 p.a. for 2018/19, updated each year), travel funds and a research allowance for 4 years.