

A wide-angle photograph of the main building of Cardiff University, featuring a large central dome and a tall clock tower. The building is surrounded by a green lawn with people sitting on it, and trees in the background under a clear blue sky.

PHD AT CARDIFF UNIVERSITY, SCHOOL OF BIOSCIENCES
AVAILABLE AS A PART OF GW4 FRESH CENTRE FOR
DOCTORAL TRAINING

3.5 YEARS STUDENTSHIP, INCLUDING AN RCUK STIPEND, FEES AND RESEARCH TRAINING SUPPORT GRANT

***CRYPTOSPORIDIUM* MOVEMENT IN WATER: IMPACT OF EUTROPHICATION
AND CLIMATE CHANGE ON THE ZONOTIC DISEASE AGENT**

Contamination of drinking water with *Cryptosporidium* parasites is a major challenge in developed countries, and source of fatal disease for over 0.2 million infants in developing countries. The majority of the *Cryptosporidium* oocysts are removed from the environment by the particle-feeding community within riparian ecosystems, but the precise range of organisms involved is not known, and their response to environmental challenges such as climate change, increased flooding or eutrophication has not been tested.

This project will be the first to follow the fate of *Cryptosporidium* oocysts as they enter aquatic food chains, identify the main sinks for *Cryptosporidium* oocysts in the aquatic environment, and allow prediction of the possible outcomes of environmental challenge on the risk of contracting cryptosporidiosis.

The project will allow student to gain experience and expertise in:

- **Environmental metagenomics**, a cutting-edge technology using NGS methodologies
- **Laboratory experimentation**, using experimental microcosms set up in a laboratory flume
- *Cryptosporidium* testing, quantification and sampling **methodologies, appropriate for subsequent employment in the water industry**
- Benthic invertebrate **community structure and dynamics** in different water systems
- **Agent based modelling, Bayesian modelling and bioinformatic analyses**
- **Stakeholder team work**

The supervisory team comprises parasite ecologist (Prof Jo Cable, Cardiff University), *Cryptosporidium* cell culture specialist (Dr Anna Paziewska-Harris, Cardiff University), microbial phylogeneticist (Dr Tom Williams, University of Bristol) and expertise of Public Health Wales *Cryptosporidium* Reference Unit (Prof Rachel Chalmers).

The applications open on 15th January and the deadline is 15th February 2018. For any further queries contact Prof Jo Cable (cablej@cardiff.ac.uk) or Dr Anna Paziewska-Harris (paziewska-harrisa@cardiff.ac.uk).

For more information see the project description at <http://www.gw4fresh.co.uk/projects/>

To apply follow the instruction at <http://www.gw4fresh.co.uk/how-to-apply/students/>