



MURDOCH
UNIVERSITY
PERTH, WESTERN AUSTRALIA

PhD Studentship: Interaction of *Cryptosporidium* life cycle stages with aquatic biofilm communities

Cryptosporidium is a common protozoan parasite of vertebrates and an important cause of diarrhoeal disease in humans and livestock. The environment is an integral part of the parasite's ecosystem and water is a particularly important vehicle for transmission of *Cryptosporidium*. This project will examine a poorly studied component of the parasite's ecosystem, biofilms, for which there is evidence for their role as reservoirs for the infective stages of *Cryptosporidium*. Through the collective expertise of the research team in culturing *Cryptosporidium*, biofilms and biological microscopy, the nature of this reservoir will be studied, in particular conditions for parasite entry, accumulation, survival, persistence, replication and release.

Specifically, this PhD project will focus on the use of *in vitro* culture techniques and small-scale flow-through and rocking systems for the establishment of biofilms in the laboratory. Studies will concentrate on the survival and development of *Cryptosporidium* in biofilms under different conditions, the interactions of the parasite with other protozoa and microorganisms that make up the ecosystem of biofilm communities in nature and evidence for communication between *Cryptosporidium* and other members of biofilm communities by influencing quorum sensing and therefore biofilm structure.

The studentship will be based at the School of Veterinary Biology and Biomedical Science at Murdoch University but will work closely with other members of the research team at the centre for Microscopy, Characterisation and Analysis at the University of Western Australia, and the water Quality Research Centre in Adelaide.

The studentship is available immediately.

For more project information contact Professors Andrew Thompson on (08) 9 360 2466/2428 or email an application, including a full CV and an introductory letter describing any relevant experiences that would make you a suitable candidate, together with contact details for two referees, to Prof Thompson at: a.thompson@murdoch.edu.au