

## **ZooTRIP: Zoonotic transmission of intestinal parasites: implications for control and elimination.**

**Kezia C.L. Whatley**<sup>1</sup>, Rico Ancog<sup>3</sup>, Vincente Jr. Belizario<sup>2</sup>, Billy P. Divina<sup>3</sup>, Stephen Gourley<sup>1</sup>, Joaquin M. Prada<sup>1</sup>, Arnoud H.M. Van Vliet<sup>1</sup>, Vachel G. Paller<sup>3</sup>, Martha Betson<sup>1</sup>.

**1:** University of Surrey (UOS), Guildford, UK; **2:** University of the Philippines, Manila, Philippines; **3:** University of the Philippines, Los Baños, Philippines.

Zoonotic intestinal helminthiasis affects more than 949 million people globally, collectively contributing to an estimated 9.68 million disability adjusted life years (DALYs) lost per annum. Endemicity is focused in rural and poor urban areas of low-and-middle-income countries, where access to sanitation, hygiene, health care and education on parasite transmission is lacking.

Zoonotic intestinal helminths include the *Schistosoma spp.* (*Schistosoma japonicum*), soil-transmitted helminths, foodborne trematodes, and *Taenia spp.* each having varying degrees of lifecycle complexity, but all utilising animal reservoirs as well as human definitive hosts to maintain transmission, complicating control strategies.

Historically the mainstay of control for helminth infections has been mass drug administration of a handful of donated anthelmintic chemotherapies (praziquantel, and benzimidazoles). However, the new World Health Organisation roadmap for neglected tropical diseases directs the need for more holistic, One Health approaches to control, in order to successfully eliminate helminthiasis as a public health problem completely.

This project focuses on intestinal helminth endemicity in southeast Asia, applying a multidisciplinary approach to investigate the prevalence of zoonotic intestinal helminthiasis in the Philippines. Sampling from animals, humans and the environment has been integrated with both parasitological, and molecular diagnostics. Further work will utilise genomics and mathematical modelling approaches to investigate helminth transmission dynamics. The ultimate aim is to determine whether a One Health approach involving integrated human/animal control and surveillance programmes can provide more effective management options than solely human-focused control.