

# Department of Veterinary Medicine

## Available PhD Project:

**Supervisor:** Professor Elizabeth Murchison

**Supervisor profile page:** <https://www.tcg.vet.cam.ac.uk/directory/elizabeth-murchison>

## Project Title: Transmissible cancer evolution

The [Transmissible Cancer Group](#) at the University of Cambridge Department of Veterinary Medicine has a vacancy for a PhD student to study transmissible cancer evolution.

Transmissible cancers are long-lived clonal lineages of malignant cells that operate as infectious parasites, spreading between individuals by the physical transfer of living cancer cells. Among mammals, such diseases have been described in only two species: dogs and Tasmanian devils, and are spread by mating and biting, respectively. These extraordinary cell lineages provide an opportunity to study cancer evolution over the long-term, and to investigate the interaction between cancer cells and the allogeneic immune system. Furthering our knowledge of these diseases may also shed light on their transmission dynamics and inform conservation work.

This PhD position is suited for someone with skills in computational biology and an interest in cancer evolution and tumour immunology. The student will analyse genome and transcriptome sequencing data from tumours belonging to transmissible cancer lineages. We will annotate genetic variants and use these to understand past and ongoing mutational and evolutionary processes, including the impact of mutation on gene expression and tumour phenotypes. There will be opportunities for field work. By integrating data from hundreds of tumours, our goal will be to understand how cancers exploit a transmissible niche, and how the interaction between cancer and immune system controls disease outcome.

Applicants should have a background in biology or veterinary medicine, or a quantitative science field, and should be proficient in bioinformatics. Funding is not guaranteed for this project, and the successful applicant will be supported to apply for PhD scholarships.

Please contact Prof Elizabeth Murchison, [epr27@cam.ac.uk](mailto:epr27@cam.ac.uk), for more information.

**Funding:** not guaranteed - applicants are invited to apply before the Cambridge University Postgraduate Funding competition deadline in order to be nominated for suitable scholarships.

**How to apply:** Contact the Supervisor to discuss the project before submitting an official application.

More details on the application process here:

[How to apply — Department of Veterinary Medicine \(cam.ac.uk\)](#)