Ref: 05/NO
Closing Date: 16.02.26 (close of business)

Project Title: The chicken run – development and characterisation of novel chicken in vitro models for studying viral pathogens

Supervisors: Natacha Ogando and Sarah Keep
Research group: Coronaviruses

Project Summary:
Wouldn't it be cool to grow parts of a chicken's airway on a dish? And just imagine - how many animals could we spare if this idea became true?! In this project, you will be able to contribute in the development of airway cultures that mimic the chicken's tracheal, bronchial and lung tissue as closely as possible. These cultures will be designed to produce mucus, move through cilia cells beating and mount an immune response against viral infections. Additionally, you will compare these "mini-airway" cultures side-by-side with live tracheal organ cultures and tissue sections from animal samples to ensure they resemble the cellular composition, structure, and function of chicken's airway.

Ultimately, these *in vitro* airways will provide a powerful non animal model for studying viral infections such as infectious bronchitis virus (IBV) and avian influenza — both of which are major threats to poultry health and food security worldwide. This is an opportunity of pioneering research that supports the NC3Rs principles, helping replace and reduce the use of animals in science while developing more predictive in vitro models.

Further Details:
During this internship, you will gain a wide range of laboratory and soft/transferable skills. Your training will include:

- Cell culture techniques – isolation of primary cells from tissue, differentiation into airway 3D cultures/organoids, preparation of tissue slices, and maintenance of cell cultures.
- Imaging techniques – Immunofluorescence assay and confocal microscopy.
- Virology techniques – infection of cultures and viral titration by plaque assay.
- Molecular biology techniques – real time quantitative PCR (qPCR).
- Soft skills: public speaking, scientific presentation, writing scientific article, data analysis, teamwork, problem-solving, critical thinking, and decision making.

You will work closely with two collaborative teams — the Cell Culture Science Technology Platform (STP) and the Coronavirus Research Group — gaining insights into advanced in vitro modelling and the biology of avian respiratory viruses.

References for Suggested Reading:
doi: 10.3389/fcimb.2025.1565513. PMID: 40415959.
doi: 10.1016/j.jviromet.2025.115257. PMID: 40907768.
doi: 10.1186/s12985-025-02714-w. PMID: 40234888.
doi: 10.1007/978-1-0716-0900-2_8. PMID: 32833207

To Apply: See How to apply. Closing date: 16.02.26 (close of business)