



## General Risk Assessment

### Form RA1

<b>School Assessment No:</b>	R(D)SVS/The Roslin Institute
<b>Title of Activity:</b>	<b>ELISA Masterclass- Flu Fighters</b>
<b>Location of Work:</b>	Easter Bush Science Outreach Centre
<b>Brief Description of Work:</b> A half-day (approx. 4 hour) hands-on ELISA masterclass, which includes the following techniques: <ol style="list-style-type: none"><li>1. Carrying out an ELISA - working with proteins and antibodies</li><li>2. Quantification of protein concentrations- using a microplate reader</li><li>3. Centrifugation</li><li>4. Micro-pipetting</li></ol> In addition participants will perform a range of paper-based and discursive learning activities. <b>Workshop outline</b> <ul style="list-style-type: none"><li>• ELISA jigsaw activity to teach/reinforce ELISA technique</li><li>• Introduction to influenza virus and avian flu</li><li>• Introduction to micropipettes</li><li>• Serial dilution to generate dilutions of known antigen concentration.</li><li>• Quantitative ELISA to assay infection status of several chickens</li><li>• Analysis and interpretation of results</li><li>• Discussion with scientists from The Roslin Institute</li></ul> The workshop will be led by a member of UoE staff and assistance will be provided from one or more student/researcher/clinician volunteers (including undergraduate and postgraduate students, UoE staff and STEM Ambassadors).	

**Hazard Identification:**

<b>Hazard(s)</b>	<b>Present Risk Evaluation</b> L/M/H	<b>Control Measures</b> (i.e. alternative work methods / mechanical aids / engineering controls etc.)	<b>Risk Evaluation after control</b> L/M/H
Slips and trips: Items left in walkways, liquid spills	M	No electrical wires or other items will be placed across walkways. Any liquid spills will be cleaned up immediately.  Stools will be stacked or pushed under benches when not in use. Students will be instructed on how to empty the wells correctly  Dirty well plates will be placed into trays, minimising risk when instructors move them to be cleaned  Any spills will be immediately identified and cleaned up accordingly	L
Electrical hazards: Lab equipment	L	All electrical equipment at Easter Bush Campus is PAT tested annually. Participants will be supervised when using centrifuges and operating the microplate reader.	L
Biohazard: handling antibodies and antigens	L	Nitrile gloves will be worn during the use of these reagents  Small quantities of these reagents will be used at any one time  Any spills will be cleaned up using suitable disinfectant.  Specific containers for the used pipettes to be placed in to and all pipettes and tips will be disposed of in biohazard bags	L
Risk of severe burns and eye damage: Chemical hazard	M	Everyone working with the acid will wear lab coats, nitrile gloves and safety eye glasses when using the acid- and when handling the	L

when handling sulphuric Acid		<p>acid in the plate INCLUDING WHEN USING THE PLATE READER AND DISPOSING OF THE ACID</p> <p>Students will be closely supervised at all times.</p> <p>When the acid is being used, it will be aliquoted in to small glass screw top Duran bottles, around 20ml.</p> <p>Only trained staff members will handle the stock solutions.</p>	
Mild skin and eye irritation- Chemical hazard: when using PBS and 10% Tween	L	Chemicals involved are not hazardous but could cause minor discomfort if swallowed or splashed into eyes. Participants will wear lab coats and nitrile gloves throughout the practical work and eye protection when appropriate.	L

**Engineering Controls:** none required

**Personal Protective Equipment (PPE):**

Eye / Face	x	Hand /Arm	x	Feet / Legs		Respiratory	
Body (clothing)	x	Hearing		Other (Specify)			
<b>Specify the grade(s) of PPE to be worn:</b> Reusable safety glasses and lab coats, disposable nitrile gloves.							
<b>Specify when during the activity the item(s) of PPE must be worn:</b> Lab coats at all times during workshops, gloves and safety glasses as required by practical activities.							

**Non-disposable items of PPE must be inspected regularly and records retained for inspection**

**Persons at Risk:**

Academic staff	x	Technical staff	X	P'Grad students	x	U'Grad students	x
Maintenance staff		Office staff	x	Cleaning staff		Emergency personnel	
Contractors		Visitors	x	Others			

**Additional Information:**

All demonstrators will receive training, including all health and safety aspects, before taking part in the workshops.

School groups taking part in the workshop will be accompanied by a teacher/other responsible adult at all times.

**Assessment carried out by:**

Name:	Jayne Quoiani	Date:	20/09/2018
Signature:			