



Use this form to assist you to complete risk assessments for hazardous activities and processes. Any serious or ongoing hazards should be reported via [RiskWare](#) to ensure that appropriate corrective actions are tracked and completed.

Faculty/School:	Science/Partner Engagement and Outreach/SOLES	Initial Issue Date: 29/05/2018
		Next Review Date:
Risk Assessment Reference Number:		
Risk Assessment Name:	Kickstart Biology Heredity Workshop	
Prepared by:	Eugenia O'Brien, Chau Le	
Responsible supervisor/s:	Kristl Mauropoulos	

Identify the activity and the location	Identify who may be at risk This may include fellow workers, students, visitors, contractors and the public
Activity or process: New workshop on heredity for HSC students (and their teachers) to be delivered at various times at the University of Sydney.	Persons at risk: HSC Biology students and teachers attending the workshop, staff (Chau Le, Gabriel Nguyen, Elise Laming, Eugenia O'Brien and various demonstrators for Biology Outreach)
Location: Wet laboratories at the University of Sydney (e.g. Solander, Banks, Badham, LEES, Molecular Biosciences – but mainly Badham)	Risk assessment team (Who was consulted?): Eugenia O'Brien, Chau Le, Markus Hofer (Chair, WHS Committee)

List of Legislation, Code of Practice, Australian Standards, Guidance Materials used to determine control measures
Work Health and Safety Act 2011

Risk Assessment Methodology

Assessing the risk is a brainstorming exercise, which is most effectively carried out in a team environment with the people required to complete the activity or process. Most activities or processes are broken down into a variety of separate tasks. For each task, consider the hazards, the potential harm or negative outcomes and the conditions required for those negative outcomes to occur.

Whenever assessing the health and safety risks associated with a task, always consider the following primary risk factors.

- The **physical activities** required to complete the task e.g. repetitive movement, high force, physical exertion, awkward posture
- The **work environment** e.g. lighting, work layout, traffic, thermal comfort, working in isolation
- The **nature of the hazard itself** e.g. working with chemicals, microorganisms, radiation, machinery, potentially violent clients
- The **individual workers involved**, e.g. level of training, skills, experience, health, age, physical capacity

The information gathered from the **risk assessment** process must be used to develop a **Safe Work Procedure (SWP)**.

Task or scenario	Hazard/s	Associated harm, e.g. what could go wrong?	Existing Risk Controls	Current risk rating Use the Risk Matrix	Any additional controls are required? ¹	Residual risk rating Use the Risk Matrix
Micropipetting	Misuse of micropipettes	<p>Stabbing, poking or breaking the skin with a pipette tip</p> <p>Damaging a pipette</p>	<p>Students will be given clear instructions on how to handle pipettes and will be constantly supervised while using micropipettes.</p> <p>Students will be provided with clear instructions about using a pipette, particularly in avoiding over or under winding the dial, always using a pipette tip to load samples and using the plunger slowly and with care.</p>	Low	First aid	Low
Transferring chemical solutions: Edward's extraction buffer (Tris-Cl, NaCl, EDTA, SDS), isopropanol	Skin or eye exposure to chemicals	Skin reaction or chemical burn to the eye	<p>Chemicals will be used at a low concentration and are minimal risk.</p> <p>Safety glasses, lab coats and gloves will be worn for the entirety of the workshop.</p> <p>Safety Data Sheets will be made available and all staff will receive training in appropriate handling and disposal of solutions.</p> <p>Students will work in small groups and will be supervised while using dilute chemicals.</p> <p>Students will be given clear instructions about using micropipettes to transfer chemicals.</p> <p>Chemicals will be stored in stable screw top bottles and will be pipetted into tubes held in racks.</p>	Medium	Emergency controls	Medium

¹ Always consider whether or not it is possible to eliminated the hazard or hazardous task altogether. If this is not possible, refer to the [hierarchy of risk controls](#).

			The closest eye wash facilities will be located where students can wash hands/eyes if they get chemicals on them.			
Gel electrophoresis	Spills, using liquids near electrical equipment, use of fluorescent stain, SYBR safe	Injury from slipping, electric shock, contact with gel containing DNA stain, SYBR safe	<p>Students will be advised to pour buffer into the tank carefully to avoid spills and contact with electrical components of the tank.</p> <p>The area around a spill will be isolated and cleaned up immediately.</p> <p>Participants will not be permitted to handle the gel that contains SYBR safe. There should be no reason for making contact with the gel during the activity. Participants will also be wearing gloves throughout the entire lab session, which will keep them safe in the event that they do come into contact with the gel. Students will be briefed on correct handling techniques before being allowed to observe the gel and will be told to wash hands after the lab session.</p> <p>Staff will be responsible for handling the gels with gloved hands and minimal contact.</p>	Medium	Emergency controls	Medium
Using electrical equipment e.g. gel electrophoresis tanks, centrifuges.	Faulty equipment	Electric shock or exposure to moving parts	<p>All equipment is tested and tagged to check for working order. Staff will test equipment and powerpoints while setting up. All equipment will be deemed fit for purpose.</p> <p>Centrifuges will not spin unless the lid is closed.</p> <p>Powerpoints will not be overloaded with multiple electrical items.</p>	Medium	Emergency controls	Medium
Visualising gels	Exposure to UV light	Eye damage, skin burns	<p>Staff will operate illuminators and participants will not use the equipment.</p> <p>Visualisers do not emit UV light until the door is closed, so exposure is unlikely.</p>	Low		Low
Using glassware	Glass breakages	Cuts from glass	Participants will be instructed to handle all glassware with care.	Low	First aid	Low

RISK ASSESSMENT FORM

			<p>Any glass breakages will be cleared by staff using a dustpan and brush and using sharps containers for disposal.</p> <p>Students will be advised to clear themselves away from any areas in which glass has smashed.</p> <p>First aid/band aids can be administered should anyone receive a cut from a glass breakage.</p>			
Using scissors	Participants use scissors for a paper activity and to obtain a small amount of plant material	Cuts	Participants will be instructed on safe use and will be supervised.	Low	First aid	Low
Spillages	Slips and falls because of spills	Injury from slipping	<p>The area around a spill will be isolated and cleaned up immediately.</p> <p>Small volumes of liquids will be used and will be held in sturdy bottles and racks.</p>	Low	Emergency controls	Low
Wearing gloves	Allergy to disposable gloves	Skin reaction to latex, nitrile or vinyl PPE	<p>Students will be asked if they have an allergy to gloves prior to commencing the workshop.</p> <p>A range of PPE options will be made available if required.</p>	Low	Emergency controls	Low
Emergency evacuation	Depends on the nature of the evacuation	Depends on the nature of the evacuation	<p>In the case of an emergency on University grounds, the alarms will sound and the guests will be directed to the appropriate emergency evacuation point.</p> <p>Staff will familiarise themselves with the nearest evacuation meeting point using the map in the laboratories.</p>	Low	Emergency controls	Low



Implementation of Additional Risk Controls				
Additional controls needed	Resources required	Responsible person	Date of implementation	RiskWare Reference
Write the Safe Work Procedure (SWP)	Time (approx 1 hour)	Supervisor		N/A
Train workers to complete process in accordance with SWP	Time – supervisor and workers	Supervisor		N/A

List emergency controls for how to deal with fires, spills or exposure to hazardous substances and/or emergency shutdown procedures
<p>Staff will be guided by the University's instructions for emergency evacuation.</p> <p>In the event of a medical emergency, particularly in the case of a chemical splash in the eye or contact with skin:</p> <ol style="list-style-type: none"> For eyes, check for and remove contact lenses, flush the eye with plenty of cool water for at least 15 minutes, occasionally lifting the upper and lower lid. For skin contact, flush with plenty of water for at least 15 minutes, remove any contaminated clothing or shoes and wash before reuse. Seek medical attention. Notify University staff. <p>In the event of a medical emergency:</p> <ol style="list-style-type: none"> Call Triple Zero (000) and ask for an ambulance Contact the closest first aider If the person is unconscious, send for the closest Automated External Defibrillator (AED) Call Security (9351-3333) Send people to flag and direct the ambulance on arrival

REVIEW			
Scheduled review date	1 year	2 years	3 years
Are control measures in place (YES/NO)			
Are controls eliminating or minimizing the risk (YES/NO)			
Are there any new problems with the risk (YES/NO)			
Reviewed by:			
Actual Review date:			



Risk Matrix.

			Potential Consequences				
			L6	L5	L4	L3	L2
			Minor injuries or discomfort. No medical treatment or measureable physical effects.	Injuries or illness requiring medical treatment. Temporary impairment.	Injuries or illness requiring hospital admission.	Injury or illness resulting in permanent impairment.	Fatality
			Not Significant	Minor	Moderate	Major	Severe
Likelihood	Expected to occur regularly under normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
	May occur at some time	Possible	Low	Medium	High	High	Very High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium