

APPENDIX 14: Laboratory Risk Assessment

This document is provided as a template that departments might wish to adopt and/or adapt for risk assessment and work plans for individual research groups/areas.

1. DEPARTMENT DETAILS		
Building: JR Hospital, West Wing, Level 5	Rooms or area: LL3 05-66-04B Special lab (animal procedure room) 05-66-04A Special lab (MacLaren clinical trials) Tissue Culture room 9 Cold room 3 LL2 (for sonicator/cryostat) Confocal microscope	Risk assessment Version/Date 09/09/2020 Version 2.0
Head of Department	Prof. Kevin Talbot	
Department:	NDCN	
Academic/Line Manager	Stephanie Halford, Robert MacLaren, Kanmin Xue, Sumathi Sekaran, Andrea Nemeth	
People returning to working on site (status/names)	Staff	NAME(S)
	Postdoctoral scientists, technician	Suzanne Broadgate (Post doc, Halford) Michelle McClements (Post doc, MacLaren) Cristina Martinez (Post doc, MacLaren) Ahmed Salman (Post doc, MacLaren) Joel Quinn (Research Assistant, Xue) Jing Yu (Post doc, Halford)
	Post graduate students	Solomon Merepa (DPhil, Halford) Saoud al-Khuzaei (DPhil, Halford) Laurel Chandler (DPhil, MacLaren, Xue) Lewis Fry (DPhil, MacLaren) Ariel Kantor (DPhil, MacLaren) Caroline Peddle (DPhil, MacLaren) Federica Staurengi (MSc, MacLaren) Imran Yusuf (DPhil, MacLaren) Connie Han (DPhil, MacLaren) Elena Piotter (DPhil, MacLaren) Sophia Bellingrath (DPhil, MacLaren) Ricardo Parolin Schnekenberg (DPhil, Nemeth) <i>DGS is involved for DPhil students</i>
Activity Summary (Types of activities expected & authorised to take place – brief description of the experiments and equipment used)		
All research projects involve standard molecular biology methods, primarily consisting of; DNA, RNA and protein extractions, PCR, RT-PCR, qPCR, agarose gel electrophoresis assessments, plasmid cloning using <i>E.coli</i> , ICC, IHC, western blotting, cell culture of standard immortal human and mouse cell lines, primary cell cultures, plasmid transfections, viral transductions, cell imaging and confocal microscopy.		

MacLaren and Xue lab research projects include AAV production in tissue culture lab 9. All tissue culture maintenance, transfection, transduction and other cell-based work occurs in tissue culture lab 9.

MacLaren research also includes handling and preparation of AAV samples for use in human clinical trials occurring in the Eye Hospital within West Wing. Processing, storage and delivery of human samples from patients involved in clinical trials are also necessary tasks and are conducted in LL3, tissue culture lab 9 and the clinical trials Special Lab.

MacLaren and Xue research using the molecular biology methods listed are performed in LL3 with MacLaren group equipment: fridges, freezers (-20 and -80), thermal cyclers, gel and western blot tanks, power packs and the relevant associated computer-based imaging/assessment machines (all bay 4). Reagents are stored in allocated fridges and freezers but also in cold room 3.

Halford researchers have their own thermal cyclers, gel tanks, power packs, water baths (all housed in Halford bay), fridges (bay 3) and freezers (bay 3 and end of Halford bay). All shared equipment in LL3 and as outlined below as well as the Nemeth bench top centrifuge (Nemeth bay).

Nemeth researchers have their own thermal cycler, gel tank, power pack, fridge, freezer. All shared equipment in LL3. Reagents are stored in allocated fridges and freezers but also in cold room 3.

Sections of preserved tissue are prepared on the cryostat in LL2, cells are stored in liquid nitrogen storage facility.

Equipment shared by researchers named in this document are in shared rooms/areas listed at the top of this form and are also shared by researchers in the facility NOT named above: microwave, gel docs, UV transilluminator, blue light box for gel excision (all bay 4), benchtop microcentrifuges and centrifuges, Nanodrop, -80 freezers, bacterial incubator (bay 1), bacterial shaking incubator, chemical storage cupboards, weighing facilities (bay 3), fume hood for pouring gels with ethidium bromide (bay 1), ice machine, dry ice container, autoclave and glasswash facility, cryostat, confocal microscope.

Shared use?

Is the space shared with individuals from other departments? If yes, please list the departments concerned
YES

LL3 (05.66.46)– Bennett – Rinaldi – MacLaren – Halford – Sekaran - Nemeth

TC lab 9 – MacLaren-Xue-Halford-Nemeth

Cold room 3 - Bennett – Rinaldi – MacLaren – Halford – Sekaran - Nemeth

Cold room will be limited to an occupancy of one person at any time, we will employ a stop and wait approach.

The bacterial shaker in LL3 will require an online booking system as it has limited capacity for cultures and with varied shift patterns between research groups it will be important to book this facility. The centrifuge in LL3 may also require a booking system if long spin times are likely to be required. Additionally, the cryostat in LL2 and the confocal microscope will require online booking systems.

Extent of on-site activity (Indicate all that apply)	Yes or No?
Continually with a single individual occupying the space	No
Continually with different individuals occupying the space one at a time	Yes
Continually with different individuals occupying the space simultaneously with appropriate physical distancing measures	Yes

Occasionally (e.g., a few short visits per day or week to check equipment)	Yes
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2. REDUCING THE SPREAD OF COVID-19

Travelling To/From Work:	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<p>Personnel with symptoms</p>	<p>No one is to travel to the site if they are experiencing symptoms consistent with COVID-19.</p> <p>Anyone with symptoms must self-isolate and inform their PI immediately, who will then inform the West Wing safety committee. . https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-self-isolation.aspx</p> <p>Personnel must not attend the site if anyone in their household is experiencing any symptoms of COVID-19 or self-isolating.</p> <p>Anyone with symptoms must self-isolate and inform their PI immediately, and book a test using the University Early Alert Service: https://www.ox.ac.uk/coronavirus/health/covid-testing</p> <p>Personnel must not attend the site if anyone in their household is experiencing any symptoms of COVID-19 or self-isolating. https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-self-isolation.aspx</p>
<p>Personnel who may be classed as vulnerable</p>	<p>If classed as a vulnerable person, the person should not come to work but instead contact the line manager and HR for advice, a specific risk assessment will be carried out.</p>
<p>Exposure during travel to/from work</p>	<p>Staff that rely on public transport and are able to work from home should continue to do so it is safe to return.</p> <p>Those that need access to the lab to perform their research duties - When travelling on public transport a face covering will be worn and hand sanitiser used to minimise the risk of contracting COVID19. Staff will only come to the lab to perform necessary experiments which can then be analysed at home. As such they will aim to minimise the number of days they need to come into the lab and plan to leave maximal days between visits. This will allow them to be vigilant for the development any symptoms between lab visits so preventing spread of infection to co-workers should COVID19 be contracted while commuting.</p> <p>We have an excel sheet to book in shifts so we plan to not book in at the same time as others that sit /work near us, therefore we will probably naturally fall into cohorts.</p> <p>Members of the MacLaren and Nemeth research groups will travel to work by car, cycling or walking and will not use public transport. Until mid-September, JQ will need to travel to work using public transport and will follow the guidelines detailed above.</p>

	Individuals must either use hand sanitiser or stringently wash their hands for 20 seconds upon arrival, then regularly when on site. Laboratory hand washing basins and toilet sinks are available for hand washing and posters will be displayed for guidance. Use paper towels to dry hands
Safe Distancing in the Building	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
Entering and leaving the hospital buildings to access levels 5& 6	Follow the hospital staff guidelines when in hospital spaces. Face mask are required to be worn when in the hospital by all staff.
Lifts/stairs	Use the stairs where possible staying to the left and use landings to avoid crossing where possible. Only 2 in lift if lift required to be used.
Long corridors	Use line of sight/be vigilant to other users and use stop and wait to avoid close crossing. Keep to the left when walking in corridors or going through the stairs.
Shared toilet facilities	Ensure good hygiene and follow local rules outlined for use of toilet facilities
Rest/break facilities	Follow local guidance for these facilities as per West Wing work plan risk assessment.
Crossing the hospital site to drop off sequencing reactions	To avoid multiple people making the cross-site journey, set up a single lab communal drop off site in LL3. Prior to the collection time in the main hospital one person take all samples to drop off point in the main hospital and follows the guidelines for PPE required for crossing the hospital site.
Visitor to the lab	No visitors are allowed on site, unless it is for the maintenance of an essential equipment or service. Supervisor will discuss RTOSW with each staff, carry out the manager checklist and send the completed form to HR. New starter will be associated with one lab member and work under a "bubble" arrangement, the new starter and the trainer will endeavour to maintain 2m social distancing, however, supervision and training will be required which may take place in close range. As per University policy, users will be wearing face masks whilst working in the laboratory. RTOSW induction reminds user to notify planned contractors visit, so they can be forewarned of covid measures in place and given a brief safety induction on arrival. All staff to have a return to work induction prior to their start date.
Safe Distancing in the Lab	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
Social distancing in laboratory and tissue culture	Stop and wait approach will be followed in corridors and shared areas to maintain social distancing and maximum occupancy at all time.

Shared equipment and space

Consideration of others is key to successful implementation of these plans. Colleagues encouraged to alert each other if guidelines are not being adhered to, and ask that anyone reminded of social distancing guidelines or the need for good etiquette should take such reminders in good grace.

Limiting group members in the lab at any one time will be achieved using a rota for the Halford/MacLaren/Sekaran/Nemeth groups. This will be implemented to ensure people are limited within bays and social distancing can be maintained in the write up areas. Write up areas will only be used during down time between experiments.

Research members listed in this document will work in shifts to ensure appropriate occupancy levels at all times. The day will be split into 3 shifts: 07:00-11:45 / 12:00-16:45 / 17:00 – 22:00. A 15 minute window between shifts will allow for lab entry and exit to occur without crossover. Each member will be allowed one double shift per week to allow for long experiments. New slots will be booked no sooner than every Thursday for the week ahead.

LL3 includes desk space along its perimeter. Anyone returning to on site working will do so in order to perform laboratory tasks as desk-based work should be performed at home. However, during incubation times staff may wish to access their desk space to order items or look up required information. With reduced occupancy and controlled shift work, this is expected to be achievable. However, all research team members are prepared to be flexible on the desk and lab bench they use during their shift and will negotiate with others working the same shift as them in order to maintain safe distancing. Any shared spaces will be thoroughly disinfected before and after use.

Strict booking systems will be in place for long use pieces of equipment such as confocal microscope, tissue culture hoods. Cleaning of equipment before and after use will be required with chemgene or 70% ethanol spray.

The space in LL3 is essentially split into two halves with Bennett and Rinaldi groups occupying one half and MacLaren, Halford, Sekaran and Nemeth groups occupying the other half. Bays 1, 3 and 4 are shared areas and we suggest MacLaren equipment (thermal cycler) in bay 1 could be moved to bay 4 to limit the need to walk across the Bennett area of the lab.

Facilities team will assess if the shared bacterial incubator currently in bay 1 could be moved to a more accessible location.

Use of the fume hood in bay 1 will still be required but experiments can be adapted to avoid this. For example, by purchasing SyberSafe or an equivalent product in place of ethidium bromide our research groups will significantly reduce the need to use the fume hood. Certain chemical preparations will still require access to the fume hood, but this will be minimal and with low occupancy in the lab it should be easily negotiable on any given day. A stop and wait approach for bay 1 will be employed.

In the MacLaren area of the lab, a Nanodrop is located at the end of the bench and this is shared amongst the entire department. Its current location

	<p>is not conducive to social distancing. Any user would block a communal access route and prevent use of MacLaren benches due to social distancing requirements. We suggest it could be moved to bay 3, which is a shared area and not heavily used. With reduced occupancy in the department, this seems a more workable solution under the current restrictions. A stop and wait approach for bay 3 will be used.</p> <p>Specific rules for working in TC lab:</p> <p>Tissue culture lab 9 is used by the MacLaren, Xue, Halford and Nemeth research groups, which run their own shared Google calendar system. Booking includes all hood and equipment use in that room therefore appropriate working capacity can be maintained through adherence to the booking system. Maximum occupancy has been identified by the facilities team as being two in tissue culture lab 9, so long as the individuals occupy hood 1 and hood 3. Any movement to and from equipment within the room will be handled appropriately by the individuals in the room at the same time. Single occupancy will be favoured.</p> <p>Users will be wearing face masks in the laboratory per University policy.</p> <p>Specific rules to accessing Cryobank:</p> <p>When accessing the cryobank, up to two people require to work together for safety reason, in this instance, people may be less than 2m away from each other and will need to wear face masks provided by the Department.</p> <p>Shared PPE such as face shield must be cleaned before and after use with the provided cleaning material. Clean nitrile gloves must be worn under the cryogloves.</p> <p>Disposable PPE must be disposed of as general waste once the activity is terminated – See removal of PPE poster displayed by LN2 cryobank.</p>
Cleaning Regimes	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken e.g. availability of hand washing facilities and hand sanitizers
<p>Door handles and high touch areas</p> <p>Lab benches and write up space</p> <p>Shared equipment</p>	<p>Many doors are held open on a automatic magnetic arm which would release the door in case of a fire. It is not suitable to prop open fire doors, therefore, for doors that cannot be propped open, frequent cleaning of handles should be undertaken. Hand washing basins and sanitisers should be provided and used when entering the lab.</p> <p>Each researcher should be responsible for their own work area and write up space. Through cleaning of personal spaces and equipment should be undertaken at the start of each day, benches wiped down every 2 hours and cleaned at the end of the day.</p> <p>Wiping all benches and equipment with appropriate disinfectant before and after use.</p> <p>This include fridges, freezers door handles as well as equipment used for experimental procedures.</p>

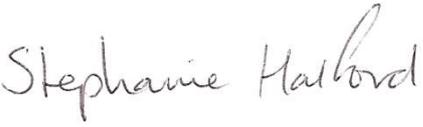
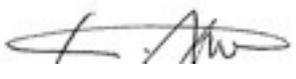
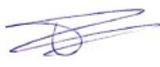
	<p>All safety cabinets front as well as inside should be wiped down with disinfectant then 70% alcohol before and after use.</p> <p>Hand washing facilities are available on either side of the door in TC and in all laboratories, people will be reminded to wash their hand thoroughly before work, during work and after work.</p> <p>Labcoats will be exchanged weekly, labcoats will be hanged every 3 coat hooks on named pegs, where there isn't sufficient storage, contact</p> <p>Facilities so a suitable solution can be sought out. Prescription safety glasses mustn't be cleaned with alcohol based product to prevent damage.</p>
Personal Protective Equipment	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken: <i>This is Covid-19 specific PPE beyond that needed for usual lab work</i>
OUH embedded space requires PPE	<p>Wearing gloves as required in the activity risk assessment, individuals must be reminded of good gloving practice, change their gloves frequently and avoid touching their face whilst wearing gloves.</p> <p>All staff and student accessing sites must have consulted OUH COVID related pages prior to accessing site: https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-masks.aspx Note that all individuals accessing sites are required to wear a face mask.</p> <p>Following University Policy, occupants will be wearing face masks whilst working on OUH site.</p> <p>Individuals will obtain a face mask from the department.</p>
Cross hospital site travel to drop off sequencing reactions etc.	
Shared area where social distancing is not possible	<p>Limit the number of times this happens by grouping runs. Use appropriate PPE as outlined by hospital guidelines.</p> <p>In the event where social distancing is not possible, and other mitigation steps cannot be used (reduction of time where this activity takes space, work back to back or side by side, use of screens, limit distance as much as possible) face masks should be worn.</p> <p>No sharing of computers unless part of communal equipment, then appropriate cleaning should be observed.</p>
Lone Working Additional Precautions	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
No additional risks anticipated with respect to COVID	The MacLaren and Xue research team members will likely work shifts that occur out of hours. These will all be voluntary and not encouraged. However, enthusiasm for returning to work has been expressed by members

	<p>of the team and out of hours work. Shift patterns were described above. Any persons working out of hours will ensure another member of the team is aware of this. Additionally, with the shared booking system, all group members will know who is in and when and a WhatsApp group will be used to confirm out of hours shifts have finished.</p> <p>Out of hours Security Services should be contacted if an incident occurred.</p> <p>The Halford group will likely use the same schedule for shift working as outlined above. Working beyond these hours will not be encouraged. However, if specifically required due to booking equipment etc. the team member will notify others in group, hence using a buddy system. Persons working out of hours/lone working will ensure that they tell another person where they are working, what they are doing and when they expect to be finished. They will also know where all the emergency numbers are displayed and use accordingly if required.</p> <p>The Nemeth group plans on using the same shared booking system as the other groups and to participate in the same WhatsApp groups. Out of hours working is planned but not encouraged.</p>
Communication with the team	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
No additional risks anticipated with respect to COVID	<p>Communication within individual research Teams - All team communication will be held via email, text, Teams or Zoom avoiding need for face to face communication</p> <p>Communication within LL3 research groups- A LL3 users WhatsApp Group or Teams group will be created to remind the lab members of the rota system for working in the lab and to raise issues encountered by lab members as new working patterns are put into place.</p>
Equipment checks	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
External contractor accessing the laboratory	<p>Only essential service visit can be scheduled and the company has been informed about the requirements for social distancing and compulsory protective measures.</p> <p>Facilities Team must be kept informed of such contractors visit on site.</p> <p>PPE will be provided, and the area will not be in use by any staff members for the duration of service. Equipment will be thoroughly cleaned with disinfectant and 70% IDA before and after service.</p>
Halford equipment	All Halford group equipment is currently in working order and generally will not need serviced/engineer assessment. Should equipment become damaged or break, Suzanne will liaise with facilities on best way to get the equipment mended.
MacLaren equipment	MacLaren equipment are well maintained and have regular service checks and contracts in place for such. Equipment are used for GLP work and clinical trials therefore require annual visits by engineers for calibration and service checks. Some items of equipment are due for such soon, for

Nemeth equipment	<p>example the ultracentrifuge in tissue culture lab 9. Any necessary on site visits by engineers will be arranged appropriately with the facilities team.</p> <p>All Nemeth group equipment is currently in working order and generally will not need serviced/engineer assessment. Should equipment become damaged or break, Ricardo will liaise with facilities on best way to get the equipment mended.</p>
First Aid Cover	
Are staff aware of how to summon first aid and from where?	Outline risk reduction measures to be taken
Yes	<p>Clear email communication prior to lab members entering the lab, with regards location of all first aid boxes and hospital switchboard extension being zero.</p> <p>Signage should be generated and displayed in prominent locations to give details of how to contact first aiders. All staff should be informed of the procedure and notified where the additional signage/information will be displayed at their return to work induction.</p>

3. MANAGING EXISTING RISKS	
Have existing risk assessment been reviewed:	Yes
Are additional control measures required?	Yes
Outline any additional control measures below:	
<p>Where other mitigation steps cannot be applied (reduction of time where this activity takes space, work back to back or side by side, use of screens, limit distance as much as possible), face masks will be used if social distancing cannot be achieved is the only amendment to the current risk assessments.</p> <p>All procedures that will be undertaken on returning to the lab have risk assessments that have been reviewed in the last 12 months and are appropriate under the current conditions. Relevant COSHH assessments are also in place and before any staff return to working on site they should review the RA and COSHH forms for the procedures they intend to perform. Any biological materials or chemicals with risks such as drowsiness should be avoided during lone working hours.</p> <p>All risk assessments are appropriate for use under the current conditions without further amendments. New risks predominantly occur from proximity with other lab users. All staff applying to return to on site working will be competent in the tasks they intend to perform and will be familiar with the SOP and associated RA and COSHH details. The shift work pattern to be implemented will avoid social distancing issues but the MacLaren lab AAV production may require supervisor attendance. This work will take place in tissue culture lab 9 with the supervisor maintaining a safe distance from the other team member working in the hood. Under these working conditions, face masks should be worn in case 2m social distancing cannot always be achieved.</p>	

4. INTERNAL DEPARTMENTAL REVIEW			
Role	Name	Signature	Date

Manager (proposing risk assessment/work plan)	Stephanie Halford Andrea Nemeth Sumathi Sekaran Robert MacLaren Kanmin Xue		24/07/2020
			July 24 th 2020
			24/7/2020
			24/7/2020
			24/07/2020
DSO and Facilities Manager (reviewing buildings related elements)	Tiphaine Bouriez-Jones		23/7/2020

5. HEAD OF DEPARTMENT APPROVAL

Head of Department: (approving risk assessment/work plan)	Name	Signature	Date
	Kevin Talbot		27 TH JULY 2020
Approval Comments			

6. FURTHER REVIEW STAGE

Review Date	September 2020
Modifications: Revision of supervision arrangements and integration of new University Policy on face coverings	
Review Date	
Modifications:	

