

## 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		
<b>Building:</b> JR Hospital, West Wing, Level 5	<b>Rooms or area:</b> Large Lab 2 (05.66.45), Tissue culture room 8 (05.66.29) Tissue culture room 4 (05.66.34) Spinning disc confocal (05-66-28A)	<b>Risk assessment Version/Date</b>  Version 4.2 24/5/21
<b>Head of Department</b>	Prof. Kevin Talbot	
<b>Department:</b>	NDCN	
<b>Academic/Line Manager</b>	Prof. Kevin Talbot	
<b>Academic/Line Manager</b>	Prof. Martin Turner	
<b>People returning to working on site (status/names)</b>	Staff	NAME(S) Lynn Ossher Alex Thompson, Ruxandra Dafinca, David Gordon, Jakub Scaber, Emily, Thanuja Dharmadasa, Jennifer Davies, Elizabeth Dellar
	Post graduate students	Lucy Farrimond, YinYan Xu, Bjorn Vahsen, Emily Carroll, Malina Graf, Nesrine Ramadan, Evan Edmond Ricardo Parolin Schnekenberg (Nemeth group) <i>DGS involved in DPhil RTOSW</i>
	Visiting student	Carlota Tosat
<p><b>Activity Summary</b> (Types of activities expected &amp; authorised to take place – brief description of the experiments and equipment used)</p> <p><b>Western blotting</b> – Detection of immobilised protein, poly-acrylamide gel electrophoresis equipment and reagents at LL2 central bays, use of Chemidoc to image and store results (LL2). Use of small equipment such as benchtop centrifuges, pipettes, etc., in LL2.</p> <p><b>Immunostaining (tissue and cells)</b> – Detection of proteins and RNA in fixed tissue and cells, antibodies and reagents at LL2 central bays. Use of small equipment such as benchtop centrifuges, pipettes, etc., in LL2.</p> <p><b>PCR and qRT-PCR</b> – Generation of RNA, cDNA and detecting gene expression. Use of reagents and extraction kits at LL2 central bays. Measurement of RNA yields using NanoDrop equipment (LL3). Use of PCR thermal cyclers (LL2) and qRT-PCR thermal cyler (LL3).</p> <p><b>Human Biosample</b> – DNA and RNA isolation from human biosamples in LL2 using extraction kits. ELISA of human biosamples using plate shaker and BMG Labtech Plate Reader, Assessment of RIN value using Agilent Bioanalyser in Neuropathology Laboratory on Level 1 of West Wing. Access will be authorised by Laura Parkkinen on request once Level 1 Neuropath has re-opened formally.</p> <p><b>NDCN Confocal Microscope</b> – Imaging immunostained cells and tissues. Shared departmental space.</p>		

**Spinning Disc Confocal Microscope** – Imaging of immunostained cells and tissues. Live cell imaging of cultured cells. Located in (05-66-28A).

**Calcium Imaging Confocal Microscope** – Detection of calcium responses in cultured cells. Located in Bennett Lab (05-66-04B).

**iPSC cell culture** – Generation and upkeep of iPSC-derived neuronal and microglial cell cultures. All work to be carried out in TC 4 – (05.66.34). Use of small equipment such as benchtop centrifuges, pipettes, etc confined to culture room. Use of Neon transfection equipment in TC4.

**Primary mouse cell cultures** – Generation and upkeep of neuronal and microglial cells derived from mouse neural tissue. All work to be carried out in TC 8 – (05.66.29). Use of small equipment such as benchtop centrifuges, pipettes, etc., confined to culture room.

**Mouse embryonic stem cell (ESC)-derived cell culture** - Generation and upkeep of neuronal and microglial cells derived from cryo-preserved mouse ESCs. All work to be carried out in TC 8 – (05.66.29). Cells will need to be removed from and stored in Cryostorage. Use of small equipment such as benchtop centrifuges, pipettes, etc confined to culture room.

**Human biosample processing** – Samples will be brought up from outpatient department on level 3 of the West Wing and into TC 8 – (05.66.29). Samples will be processed using benchtop centrifuges, pipettes, etc. Samples will then need to be taken to NDCN confocal microscope room for use of FluidX camera box (for inventory purpose) and then transferred to LN2 vessel and ultra-high temperature freezer.

**Seahorse XF Analyser** – Analysis of oxygen consumption in cell cultures. Located in LL2. Please note that the equipment will not be available for shared use during the initial return to work.

**Extracellular vesicle isolation and proteomic sample preparation** – Use of Tofaris Liquid Chromatography instrument in LL2, Ultracentrifuge in Cardiovascular Medicine laboratory, Heated sample shaker, SpeedVac in LL2. As well as ZetaView instrument in Cardiovascular Medicine laboratory, this work is not intended to start immediately and CVM approval will be sought out to ensure that social distancing and occupancy numbers are safely maintained prior to commencement of experiments.,

**Neuropath on Level 1 - “Agilent Bioanalyser”** – this work will be carried out as per Level 1 risk assessment – booking equipment as required, maintaining social distancing at all time.

**Shared use?**

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

**LAB SPACE:**

LL2 (05.66.45) – Irani – Waters – Talbot – Turner - Tofaris

TC 8 – (05.66.29) – Talbot – Turner – Tofaris (Primary/General TC).

TC 4 – (05.66.34) – Talbot – Turner – Tofaris – Nemeth (iPSC TC).

Spinning disc confocal microscope – (05-66-28A) – Talbot-Turner. Future plan to allow access to other departmental users.

Level 1 neuropathology

<b>Extent of on-site activity</b> (Indicate all that apply)	<b>Yes or No?</b>
Continually with a single individual occupying the space	<b>No</b>
Continually with different individuals occupying the space one at a time	<b>Yes</b>
Continually with different individuals occupying the space simultaneously with appropriate physical distancing measures	<b>Yes</b>
Occasionally (e.g., a few short visits per day or week to check equipment)	<b>Yes</b>

<b>2. REDUCING THE SPREAD OF COVID-19</b>	
<b>Travelling To/From Work:</b>	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<b>Personnel with symptoms</b>	<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, and book a test using the University Early Alert Service:  <a href="https://www.ox.ac.uk/coronavirus/health/covid-testing">https://www.ox.ac.uk/coronavirus/health/covid-testing</a></p> <p>Personnel must not attend the site if anyone in their household is experiencing any symptoms of COVID-19 or self-isolating. <a href="https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-self-isolation.aspx">https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-self-isolation.aspx</a></p>
<b>Personnel who may be classed as vulnerable</b>	<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>
<b>Exposure during travel to/from work</b>	<p>Members of the laboratory will travel to work avoiding public transport whenever possible – by bicycle, car or walk.</p> <p>Members of the Talbot/Turner have agreed to work in shifts (morning/mid-day/afternoon/evening) to minimise footfall in the building and stagger staff movement into and out of the building. Buddy system in place if lone working</p> <p>If on occasion public transport has to be used and the travel arrangements to site challenge safe distancing advice members should not travel to work / enter the building but instead contact their PI for advice. Following a Talbot/Turner Lab staff survey, all but one staff member will be using non-public transport methods to return to work (walking, cycling or driving). That staff member will be directed to discuss this with their PI.</p> <p>Individuals must either use hand sanitiser or stringently wash their hands for 20 seconds upon arrival, and then regularly whilst on site. Laboratory and toilet hand washing basins are available for hand washing and posters will be displayed for guidance. Use paper towels to dry hands.</p>

<b>Safe Distancing in the Building</b>	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<b>Frequent passing of individuals, use of communal space</b>	<p>O.U.H. social distancing policy will be followed up at any time and staff should consult to O.U.H. COVID FAQ pages before accessing site:  <a href="https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-masks.aspx">https://www.ouh.nhs.uk/working-for-us/staff/covid-staff-faqs-masks.aspx</a></p> <p>As per University policy, all occupants will be wearing face masks whilst working in O.U.H. space. Some exemption exist, those are:</p> <ul style="list-style-type: none"> <li>• Individual who cannot wear it for legitimate reasons (health condition, lip reading)</li> <li>• When eating/drinking in dedicated areas</li> <li>• Staff working with protective screens</li> <li>• When alone in single occupancy offices</li> <li>• When seated at a desk if face to face interaction is consistently prevented.</li> </ul> <p>Maximum occupancy signs will be posted outside laboratories, Special Labs, and tissue cultures.</p> <p>Induction will be given to all staff returning to on site working covering arrangement in place prior to their start date.</p> <p>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.</p> <p>Supervisor will discuss RTOSW with each staff, carry out the manager checklist and send the completed form to HR.</p> <p>No visitors are allowed on site, unless it is for the maintenance of an essential equipment or service.</p>
<b>Safe Distancing in the Lab</b>	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<b>Social distancing in laboratory and tissue culture</b>	<p>Stop and wait approach will be followed in corridors and shared areas to maintain social distancing and maximum occupancy at all time.  Keep left whilst in corridors and stairs.</p> <p>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.</p>

**Shared equipment and space**

**Open space lab (LL2/LL3):**

Lab work should be planned in advance to predict the time required in the lab and share this information to the group sharing the space. Booking system will be in place for any lab related work to ensure maximum occupancy is not exceeded – only people that are booked in will be able to access site.

If required fridges and freezers can be reorganised to ensure that each person's reagents are in a fridge and freezer near their bay.

Designation of workstations within the main lab, so people are never directly facing each other or sharing equipment such as pipettes. This would also limit the maximum number of people working in a single aisle to one to allow for freedom of movement and access to the equipment while allowing for the 2m distance to be kept at all times.

In the first instance, 1 person/bay central bay will be utilised by Talbot/Turner staff in LL2 (Total of 3 bays available for group use). A Calpendo-based booking system will be set-up so that staff can book the space and limit the number of users in the LL2 space.

Provisions will be discussed for students or less-experienced/new staff members who may require supervision/training. This could include virtual meetings prior to experiments, arranging that supervisors/students/new staff members have booked alternate bays at the same time to provide socially-distant direct supervision. The use of level 1 PPE will be used when directly supervising a technique if 2m social distancing cannot be maintained.

**Specific rules for working in TC lab:**

Maximum occupancy has been identified to be: 3 users/room

Booking system will be set-up on Calpendo for the TC cabinets and only people that have a booking will be able to access site.

Enhanced cleaning of TC cabinets (inside and outside) and all shared equipment (microscopes, centrifuges) will be carried out at the beginning and at the end of a user's booked slot by the user. Where incubators are located close to TC cabinets (such as in TC 8 – (05.66.29), level 1 PPE may be required as 2m social distancing cannot be maintained.

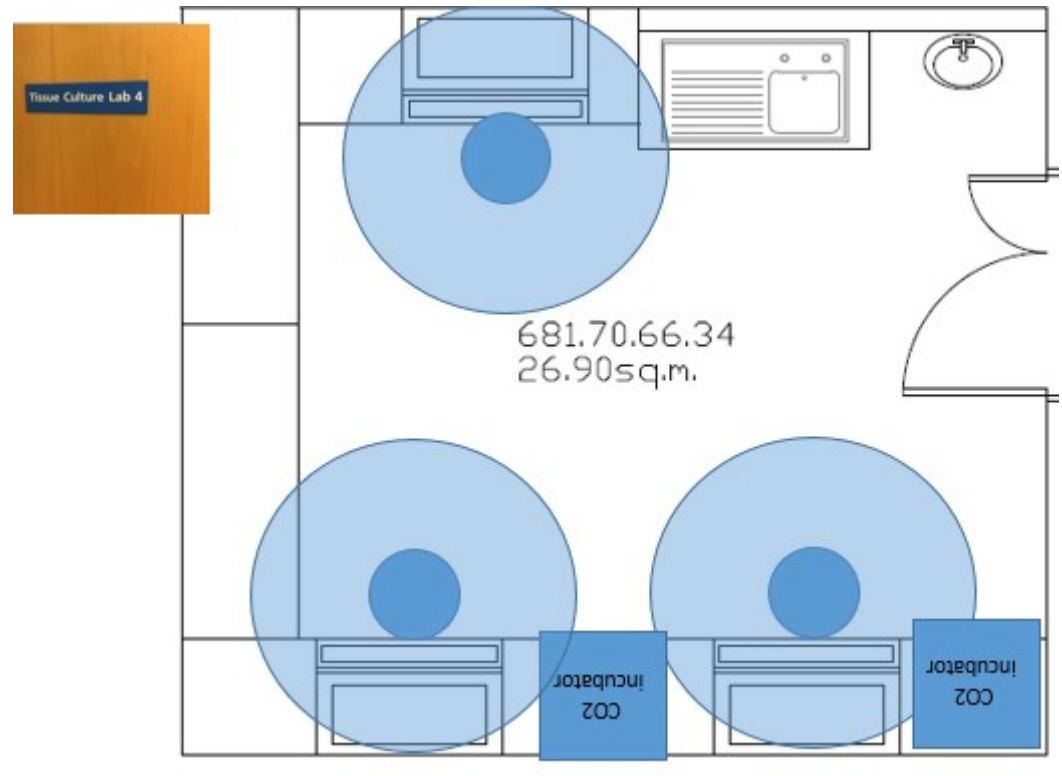
To allow 3 users to work in iPS TC 4, further rules will apply. The time spent next to the centrifuge, which is located <2m from one of the hoods, will be minimised when another user is using the hood next to it. The samples will be placed in the centrifuge, while the hood user distances themselves, and standing next to the centrifuge for the duration of the centrifugation will not be permitted.

The use of the fluorescent microscope will not be allowed at the same time as someone uses the Talbot hood (<2m). The hood will need to be booked by the microscope user to carry out any fluorescence imaging.

Movement in the room should be minimal when 3 users are in the room. Users should ensure they have collected all necessary reagents before starting work and should keep a 2 m distance at all times. Whenever that is not possible, the time spent at closer distance should be minimal and hierarchy of control applied:

- Contact as short as possible
- Avoid being face to face
- Be as far as possible for the activity.

If individuals require access to equipment near the station of another worker (e.g. centrifuge, microscope, incubator, fridge or freezer) they will either stop-and-wait until the other user is able to temporarily stand aside, or make the encroachment to within 1 m distance as brief as possible (<1 min), keeping back to back, or side to side.



If users are officially classed as clinically extremely vulnerable and government recommends shielding, but users need to carry out work in iPS TC4, they will be allowed to book all hoods simultaneously in order to minimise their exposure. When shielding is not recommended by the government, the vulnerable users can follow the same guidelines as the other users and any specific guidelines received by their personal assessment from Occupational Health.

This risk assessment will be reviewed prior to expanding work activities on site.

**Specific rules for working in the Spinning Disc Confocal room:**


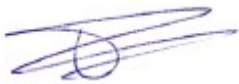
Typical occupancy is 1 In general the room is occupied by a single use, however, in situations where direct supervision is necessary, 2 users may use the room but will be required to wear level 1 PPE as 2m social distancing will not be possible. A booking system is already operational on Calpendo. Enhanced cleaning at the end of booked sessions will be used to disinfect all surfaces and equipment.


	<p><b>Specific rules to accessing Cryobank:</b></p> <p>When accessing the cryobank, up to two people are 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>
<p><b>Cleaning Regimes</b></p>	
<p>Outline any foreseeable and significant risks</p>	<p>Outline risk reduction measures to be taken e.g. availability of hand washing facilities and hand sanitizers</p>
<p><b>Shared equipment</b></p>	<p>Wiping all benches and equipment with appropriate Chemgene/ 70% ethanol 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 Facilities so a suitable solution can be sought out.</p> <p>Prescription safety glasses mustn't be cleaned with alcohol based product to prevent damage.</p>
<p><b>Personal Protective Equipment</b></p>	
<p>Outline any foreseeable and significant risks</p>	<p>Outline risk reduction measures to be taken:  <i><a href="#">This is Covid-19 specific PPE beyond that needed for usual lab work</a></i></p>
<p><b>OUP embedded space requires PPE</b></p>	<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 OUP COVID related pages prior to accessing site:  <a href="https://www.oup.nhs.uk/working-for-us/staff/covid-staff-faqs-masks.aspx">https://www.oup.nhs.uk/working-for-us/staff/covid-staff-faqs-masks.aspx</a></p> <p>Following University Policy, occupants will be wearing face masks whilst working on OUP site.</p>

	<p>Individuals will obtain a face mask from the department.</p> <p>RTOSW induction covers how to don/doff a face mask safely.</p>
<b>Lone Working Additional Precautions</b>	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<b>No additional risks anticipated with respect to COVID</b>	
<b>Communication with the team</b>	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<b>No additional risks anticipated with respect to COVID</b>	All lab and group meetings have been scheduled to take place online until further notice since the beginning of the lockdown. Members of the Talbot/Turner groups routinely use WhatsApp groups to communicate remotely about lab issues and use will continue using Teams groups to coordinate the work and lab time. It is suggested that all members of LL2 join a WhatsApp group to ensure communication and smooth running of shared facilities. This could be used alongside the Calpendo booking system.
<b>Equipment checks</b>	
Outline any foreseeable and significant risks	Outline risk reduction measures to be taken
<b>External contractor accessing the laboratory</b>	<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>
<b>First Aid Cover</b>	
Are staff aware of how to summon first aid and from where?	Outline risk reduction measures to be taken
Yes	Clear email communication prior to lab members entering the lab, with regards location of all first aid



3. MANAGING EXISTING RISKS	
Have existing risk assessment been reviewed:	Yes / No
Are additional control measures required?	Yes / No
Outline any additional control measures below:	

4. INTERNAL DEPARTMENTAL REVIEW			
Role	Name	Signature	Date
Manager (proposing risk assessment/work plan)	MARTIN TURNER		22/12/2020
Manager (proposing risk assessment/work plan)	Kevin Talbot		
Buildings Manager & DSO (reviewing buildings related elements)	Tiphaine Bouriez-Jones		23/12/2020

5. HEAD OF DEPARTMENT APPROVAL			
Head of Department: (approving risk assessment/work plan)	Name Kevin Talbot		22/1/2021
Approval Comments			

6. FURTHER REVIEW STAGE	
Review Date	September 2020
Modifications: Revision of supervision arrangements and integration of new University Policy on face coverings – Addition of Neuropath on Level 1 - “Agilent Bioanalyser”	
Review Date	October 2020
Modifications: Addition of use of Level 1 laboratories	
Review Date	January 2021
Review of BCP affect to current risk assessment (no changes)	
Review Date	March 2021

Modifications: update to staff list	
<b>Review Date</b>	<b>March 2021</b>
Modifications: Review of TC occupancy	
<b>Review Date</b>	<b>April 2021</b>
Modifications: update to staff list	
<b>Review Date</b>	<b>May 2021</b>
Modifications: update to staff list	