APPLICATION FORM NEURO RESEARCH RAMP-UP

PIs who are requesting authorization to restart specific research activities, must provide the information below.

Neuro PIs must abide by the on-campus research directives and the directives on Preventing the Spread of COVID-19 at McGill posted at www.mcgill.ca/coronavirus.

PRINCIPAL INVESTIGATOR – general information

1) Name: Rick Hoge

2) McGill ID: 150940919

3) Neuro Lab/Unit: BIC MRI Unit (clinical research section)

4) Theme of research: neuroimaging

5) Reasons why it is vital to restart without delay:

- The Unit provides a critical core infrastructure to a wide range of researchers who may receive approval to scan during the three ramp-up phases
- Certain studies involve clinical trials in which MRI provides clinical endpoints affecting patient treatment decisions
- High-value MRI infrastructure requires constant monitoring and upkeep to avoid costly damage
- The Unit incurs substantial operating costs (salaries, service contract, depreciation) regardless of whether service is provided; keeping the Unit closed results in loss of operating revenues needed to cover operating costs

6) Description of activities to be performed:

On Campus:

- MRI scanning of test phantoms
- MRI scanning of animal models
- MRI scanning of human research subjects
- Electronic fabrication and testing

Remotely:

- Computer programming
- Data analysis
- Electronic design work (circuit simulations, CAD)

7) Rooms for which access is requested:

- RF Electronics Lab (NWB207)
- 7T MRI Suite (NWB270)
- Webster 3B 1.5T/3T MRI Suites (WB308)
- Common lab/office space (WB325) "Shark Tank"

8) List of other PIs whose labs also use rooms for which access is requested:

In the course of obtaining core MRI services, a number of PIs and their personnel may visit the MRI facilities. However, the rooms listed above are entirely under the care and control of the MRI Unit.

Room WB325 is shared between MRU staff and trainees working for PIs David Rudko and Christine Tardif. The latter are also members of the MR Unit, and will collaborate to limit room occupancy to a maximum of three people at a time (which will allow a 2m distance to be maintained).

RESEARCH RESUMPTION PLAN

9) Plan for resumption of research activities in MRI Unit:

All personnel will make sure to **not come** to work on any day if the questionnaire found at the end of this document flags them as “at risk”. Someone in that condition will contact his supervisor as soon as possible.

Phase 1: Restart and protect (two weeks starting May 25)

- Two MR technologists, Mr. Ronaldo Lopez and Mr. David Costa, will be designated for entry to the MRI suites during Phase 1 when research scans are scheduled (subject to Neuro approval as discussed below). The on-site technologists will liaise by phone and internet with other technologists and physics staff working remotely to prepare and optimize scanning protocols.
- Dr. Pedram Yazdanbakhsh will access the RF laboratory to assess material inventories when required, and to locate items that may have been delivered during the shutdown (access limited to RF laboratory). Simulation and CAD work must continue to be conducted from home wherever possible, but electronics fabrication may be performed in the RF laboratory as necessary.
- Only research scans for which the PI has been granted approval by the Neuro for on-campus research during Phase 1 will be allowed, subject to the following conditions:

  The BIC scheduling team must ensure that researchers have administered appropriate COVID-19 screening questionnaires the day before, and morning of, a scheduled human scan (See questionnaire below).

MRU staff must confirm with the researcher upon arrival that the above screening has been carried out with a negative result.

If the participant, researcher, or any MRU staff member experience onset of COVID-19 symptoms during a scanning session the procedure must be terminated immediately. The participant will be sent home with instructions to call the Santé Montréal COVID-19 hotline at 514-644-4545. MRU staff will complete disinfection procedures (described below) and then phone the COVID-19 Hotline (1-877-644-4545) for further guidance (as per McGill directives).

During scans of live subjects (human or animal), the infectious disease control protocol normally used for scanning animals will be followed (gown, mask, gloves, surface disinfection, floor mopped with bleach solution after each scan; procedure masks may be used in place of N95 respirators during scans of human subjects who pass COVID-19 screening questionnaires).

Duration of close contact between MRU staff and animal or human subjects must be kept as short as possible.

During human subject scans, a maximum of three people will be allowed in the MRI suite (console, exam, and preparation rooms):

- the MR technologist presiding over the scan
- one member of the research PI's team
- the human research participant (spending majority of time alone in MRI exam room)

During animal scans, when full PPE is worn, a maximum of four people will be allowed in the MRI suite (console and exam rooms):

- the MR technologist presiding over the scan
- one member of the research PI's team
- a veterinary technician charged with the animal's care (spending majority of time in MRI exam room with animal or as far as other staff as practicable)
- a second member of the research PI's team *or* a second veterinary technician
- if more than three people are present in the MRI suite during an animal scan, full PPE must be maintained on all personnel present throughout the scanning session

A 2m distance must be maintained between all personnel at all times within the MRI suite, unless PPE as described above is worn by all personnel

Physical distancing is to be prioritized over reliance on PPE whenever possible

Additional members of the PI's research team may participate via video link, using McGill WiFi available in the MRI Suites.

Phase 2: Ramp Up 1 (two weeks starting June 8)

- In Phase 2 we will designate a second MRI technologist, Mr. David Costa, who will access the MRI suites when required to assist in scheduled research scans (which must be approved by Neuro as indicated below).

- Ms. Ilana Leppert will be added to the list of MRU staff allowed to access the Neuro when required; her access will be to Room WB325 [Shark Tank] and MRI suites to provide physics support during MR scanning.
- Mr. Michael Ferreira will access room WB325 [Shark Tank], the MRI Suites, and RF laboratory as needed to assess material inventories and route deliveries to the appropriate destinations within the MR Unit. He will also perform instrumentation setup when this is required for MRI research scans approved by the Neuro for this phase. Mr. Ferreira will establish video conferencing and webcam capabilities allowing research users to participate remotely in scanning sessions.
- During scans of live subjects (human or animal), the infectious disease control protocol normally used for scanning animals will be followed (gown, mask, gloves, surface disinfection, floor mopped with bleach solution after each scan; procedure masks may be used in place of N95 respirators during scans of human subjects who pass COVID-19 screening questionnaires).
- Duration of close contact between MRU staff and animal or human subjects must be kept as short as possible.
- During human subject scans, a maximum of three people will be allowed in the MRI suite (console, exam, and preparation rooms):
    - the MR technologist presiding over the scan
    - one member of the research PI's team
    - the human research participant (spending majority of time alone in MR exam room)
- During animal scans, when full PPE is worn, a maximum of four people will be allowed in the MRI suite (console and exam rooms):
    - the MR technologist presiding over the scan
    - one member of the research PI's team
    - a veterinary technician charged with the animal's care (spending majority of time in MRI exam room with animal or as far as other staff as practicable)
    - a second member of the research PI's team *or* a second veterinary technician
    - if more than three people are present in the MRI suite during an animal scan, full PPE must be maintained on all personnel present throughout the scanning session
- A 2m distance must be maintained between all personnel at all times within the MRI suite, unless PPE as described above is worn by all personnel
- Physical distancing is to be prioritized over reliance on PPE whenever possible
- Additional members of the PI's research team may participate via video link, using McGill WiFi available in the MRI Suites.
- Only research scans for which the PI has been granted approval by the Neuro for on-campus research during Phase 2 will be allowed, subject to the conditions listed above for Phase 1.

Phase 3: Ramp Up 2 (two weeks starting June 22)

- In Phase 3, we will add a third MRI technologist, Ms. Louise Marcotte, to the access list. Ms. Marcotte will enter the Neuro when required to assist in research scans approved by the Neuro.

- Dr. Marcus Couch will be added to the list of MRU staff entering the Neuro; his access will be to Room WB325 [Shark Tank] and MRI suites to assist in hands-on physics support when required.
- During scans of live subjects (human or animal), the infectious disease control protocol normally used for scanning animals will be followed (gown, mask, gloves, surface disinfection, floor mopped with bleach solution after each scan; procedure masks may be used in place of N95 respirators during scans of human subjects who pass COVID-19 screening questionnaires).
- Duration of close contact between MRU staff and animal or human subjects must be kept as short as possible.
- During human subject scans, a maximum of three people will be allowed in the MRI suite (console, exam, and preparation rooms):
    the MR technologist presiding over the scan
    one member of the research PI's team
    the human research participant (spending majority of time alone in MR exam room)
- During animal scans, when full PPE is worn, a maximum of four people will be allowed in the MRI suite (console and exam rooms):
    the MR technologist presiding over the scan
    one member of the research PI's team
    a veterinary technician charged with the animal's care (spending majority of time in MRI exam room with animal or as far as other staff as practicable)
    a second member of the research PI's team *or* a second veterinary technician
    if more than three people are present in the MRI suite during an animal scan, full PPE must be maintained on all personnel present throughout the scanning session
- A 2m distance must be maintained between all personnel at all times within the MRI suite, unless PPE as described above is worn by all personnel
- Physical distancing is to be prioritized over reliance on PPE whenever possible
- Additional members of the PI's research team may participate via video link, using McGill WiFi available in the MRI Suites.
- Only research scans for which the PI has been granted approval by the Neuro for on-campus research during Phase 3 will be allowed, subject to the conditions listed above for Phase 1.

Phase 4: "The way we were"

- Unrestricted scanning as was practiced prior to COVID-19 pandemic.

10) Measures to ensure 2m distancing:

- The number of MRU staff entering the Neuro during Phases 1-3 will be limited, and space assignments restricted, to ensure that 2m distances can be maintained during normal operations.
- MRU technologists will place temporary tape markings on the floor in console and other rooms to indicate 2m separation boundaries for typical working positions.

- Signage provided by Neuro and/or McGill with physical distancing directives will be posted in prominent locations in all MRU rooms (MRI Suites, RF laboratory, Shark Tank).

11) Measures when 2m distancing is not feasible:

During Phases 1-3, this would typically arise when scanning a human subject in a study approved by the Neuro's oversight committee. In this case, we would implement infectious protocols currently used for animal scanning. This entails use of PPE including gloves, gown, and mask. Rigorous procedures for glove disposal and hand-washing are followed under this protocol, and surfaces in rooms entered by scan subjects are disinfected with broad spectrum sanitary wipes. The floor is also mopped with a dilute bleach solution and allowed to dry. In cases where distance <2m is due to the presence of veterinary techs for animal scanning, these procedures are already followed as a routine procedure. It should be noted that animal scanning protocols require the use of an N95 respirator, which is not required for human scanning (more widely available procedure masks may be worn instead with asymptomatic individuals).

Periods of physical contact at <2m must be kept as brief as reasonably possible.

12) Measures to guarantee a safe working environment:

- NOTE: The procedures described herein assume that human research subjects show no signs of an active COVID-19 infection, as indicated by questionnaire or other available screening tools (See questionnaire below).
- The MRI suites are already subject to stringent access controls, due to safety hazards associated with the equipment. This will help technologists providing core services to control access, limiting to one participant (or animal tech in the case of non-human scanning) and one researcher at a time. Webcam and/or phone access to additional members of the research user's team, allowing them to participate in management of experimental procedures.
- Although PPE such as masks, gowns, and gloves are acceptable substitutes for physical distancing for brief periods of unavoidable close contact, prolonged use is recognized as arduous for staff. Distancing measures are thus to be prioritized at all times and whenever possible.
- Signage with McGill and Neuro directives in regards to distancing and PPE use will be posted in all MRU suites and rooms. Neuro management can help by circulating pdf copies of official signage to be posted.
- Work schedules will be adapted so as to minimize the on-site time spent by individuals authorized in the respective phases, and to account for health-related circumstances and care responsibilities of staff members.
- To help cope with psychosocial adversity associated with the COVID-19 pandemic, MRU staff will be encouraged to make use of mental health resources available under McGill's Health & Wellbeing Program .
- All MR technologist staff who may come into close physical contact with human or animal research subjects must change into scrubs for the duration of their entry to the Neuro for scanning.

- All members of the MRU will be required to review McGill Directives on prevention of COVID-19 spread and affirm that they have done so via this online form .
- MRU staff will also be required to review the Neuro Logistics Document.
- Staff will log each entry to the Neuro using this online form.
- MRU personnel entering the Neuro will be required to complete McGill's Daily Health Questionnaire

13) Other distancing measures:

Many tasks carried out by MRU staff can be performed remotely, using virtual desktop software and other IT tools. Staff able to carry out their duties remotely will be required to do so whenever possible.

When multiple MR technologists are on duty, staff on stand-by or on break will be required to use the suite for the now-defunct 1.5T scanner as a seating area to maintain distancing. The headcount specified in Phase 3 above can be maintained without distancing issues in the current MRU space footprint.

14) Additional common areas accessed by MRU staff:

The MRU suites in Webster and North Wing include a lunch room and restrooms, so MRU staff will not be required to access other common areas. Access from outside the Neuro may be gained through the North Wing entrances on L2 and L3, by descending to NW level B2 to the 7T suite (or taking the passage to the Webster 3rd basement). No more than 3 people will be allowed in the elevator.

15) Coordination of access to shared facilities:

The MRU is in effect a shared facility within the BIC framework. The BIC scheduling team will ensure that only projects approved for the current phase by the Neuro oversight committee will be scheduled for scans.

16) Specific PPE required:

It is anticipated that the majority of scheduled scanning activity will involve human and/or animal subjects, which will necessitate the use of the following PPE:

For research activities:

- biohazard boxes for disposal of soiled consumables
- disposable sheets to cover scanner bed
- examination gloves in various sizes (small, medium, large)
- NIOSH-certified N95 respirators (animal scanning only)
- procedure masks (for human participants)
- isolation gowns rated for contact and airborne precautions
- broad spectrum sanitary wipes
- handwashing soap and paper towels
- bleach in 1:10 dilution for mopping floors post-scan

For general staff interactions when on-site:

- procedure masks
- handwashing soap and paper towels
- broad spectrum sanitary wipes

During normal operations, it is anticipated that MRU staff will be able to maintain 2m separation. Exceptions include positioning of clinical research participants with reduced mobility, who may require close physical contact with two technologists for positioning. Such cases entail contact risks both between staff and between participant and staff. During these procedures, and any procedures requiring close physical contact between staff and participants, MRU technologists will wear procedure mask, gloves, and gown. Handwashing protocols will be followed as per animal scanning procedures, as well as wipedown of equipment and other surfaces and mopping the floor with a dilute bleach solution.

17) Monthly need for PPE:

Biohazard boxes: 12/month
Disposable sheets: 60/month
Gloves: 6 boxes/month (2 each of small, medium, large)
Procedure Masks: 80/month
N95 Respirators: 10/month (for animal studies)
Gowns: 40/month
Broad spectrum disinfectant wipes: 6 containers/month
Handwashing soap and paper towels: to be checked daily by housekeeping staff
Bleach: 20L/month

18) Frequently touched surfaces:

- console computer keyboards
- scanner control buttons and knobs
- scanner bed and head rest
- RF coils
- door knobs
- light switches
- bathroom surfaces (toilet, faucet, doorknobs)
- fMRI button boxes
- fMRI auditory headsets
- MRI pulse oximeter and respiratory belt

Surfaces contacted by research participants in MRI Suites will be wiped down with disinfectant wipes as per current policy. Surfaces contacted by staff will be wiped down whenever there is a change of system operator. Bathrooms will be wiped down after use by participants, typically once per scanning session.

In Phases 1-3, only Dr. Yazdanbakhsh will occupy the RF laboratory. With the exception of Mr. Ferreira, visitors to this space will not be allowed. High-contact surfaces will be wiped at the beginning and end of each entry by Dr. Yazdanbakhsh.

Door knobs and light switches in the "Shark Tank" will be wiped down at the beginning and end of each entry by the last person occupying that space.

Two containers of disinfectant wipes must be kept in each room controlled by the MRU. When a container is emptied, staff will switch to the second full container and notify Mr. Michael Ferreira who will be responsible for replacing the emptied container.

19) Coordination with others on floor/wing:

Most other space in Webster 3B, the location of the 3T MRI suite, is taken up by offices which are expected to be vacant as long as distancing measures are in place and working remotely remains widespread. The 7T suite is on North Wing 2B, inside a key fob restricted area with minimal traffic under normal conditions. The 3T and 7T suites have video surveillance of the hallways outside the restricted area, which will help to avoid coming and going when other foot traffic is visible.

The RF laboratory is adjacent to the 7T MRI suite, in an area expected to have minimal traffic so long as directives are in place for working remotely when possible.

The "Shark Tank" space (common office space shared by MRU staff) is only to be occupied by MRU staff entering the Neuro to carry out procedures that must be performed in-person, or students of Drs Rudko and Tardif who must come on site for scanning. This will help limit density of personnel in the space to a maximum of two people, and staff are assigned individual desk areas with their own computers. We have set up a Slack channel, accessible to the research groups sharing this space, which will be used to coordinate entries to this space (any planned entries must be posted to the Slack channel, to advise other potential users).

20) Steps in the event of a sudden ramp-down:

All scans in progress would be terminated, and participants directed to leave the building after changing back into street clothes. MRU staff would perform an orderly shutdown of MRI systems, and exit the Neuro. Remote monitoring of MRI system status would resume, with on-site visits as needed for periodic inspections and urgent maintenance.

21) Access previously granted:

Prior to May 25 2020, the MRU staff and affiliates listed below were authorized to enter the Neuro in the event of a cryogenic malfunction requiring urgent intervention to prevent system damage, or to perform research scans approved by the Neuro administration as "essential":

MR Techs:
Ronaldo Lopez

Louise Marcotte
David Costa

Research Assistants:
Michael Ferreira
Ilana Leppert
Marius Tuznik

Faculty:
David Rudko
Christine Tardif
Rick Hoge

Siemens Service Engineer:
Jacques Ladouceur

RESEARCH PERSONNEL

For each person for whom access is requested, please provide Name, ID, phase of return to work (according to ramping-up phases put in place at The Neuro), and rooms to be accessed.

David Costa, MRI Technologist
McGill ID 260008736
Phase of return to work: 1
Rooms to be accessed: 3T MRI Suite, 7T MRI Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Michael Ferreira, Research Assistant
McGill ID 119430185
Phase of return to work: 2
Rooms to be accessed: WB325, 3T Suite, 7T Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Pedram Yazdanbakhsh, Research Associate
McGill ID 260941723
Phase of return to work: 1
Rooms to be accessed: NWB207 (RF Laboratory)
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Ronaldo Lopez, MRI Technologist
McGill ID 260008735
Phase of return to work: 1
Rooms to be accessed: 3T MRI Suite, 7T MRI Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Louise Marcotte, MRI Technologist
McGill ID 260196612
Phase of return to work: 3
Rooms to be accessed: 3T MRI Suite, 7T MRI Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Ilana Leppert, Research Assistant
McGill ID 110022113
Phase of return to work: 2
Rooms to be accessed: WB325, 3T Suite, 7T Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Marcus Couch, Affiliate Member Dept. of Neurology & Neurosurgery
McGill ID 260936622
Phase of return to work: 3
Rooms to be accessed: WB325, 3T Suite, 7T Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

Richard Hoge, Director, MR Unit
McGill ID 150940919
Phase of return to work: Phases 2-3
Rooms to be accessed: 3T MRI Suite, 7T MRI Suite
Frequency of access: approximately 10 hours/week (will depend on scanning schedule/volume of approved studies)

APPROVAL

Please confirm that your director/chair or designate has reviewed and approved of this plan

Approved: Approved by NETSS

Not yet approved:

(version May 14, 2020)

COVID-19 Screening Tool for Coming to Work at the PET Unit

Based on a document for screening at the entrance of long-term facilities written by the Ministry of Health of Ontario. Version 2 - April 24, 2020

This tool provides basic information only and contains recommendations for COVID-19 screening. It is not intended to take the place of medical advice, diagnosis or treatment. Where the document includes references to legal requirements, it is not to be construed as legal advice.

Anyone from the PET Unit who does not pass the screening should not enter the Neuro

Screening Questions

1. Do you have a fever? (take temperature; fever is a temperature of 37.8 ^{o}C or greater)

☐ Yes ☐ No

2. Do you have any of the following symptoms or signs?

New or worsening cough	☐ Yes	☐ No
Shortness of breath	☐ Yes	☐ No
Sore throat	☐ Yes	☐ No
Runny nose or sneezing	☐ Yes	☐ No
Nasal congestion	☐ Yes	☐ No
Hoarse voice	☐ Yes	☐ No
Difficulty swallowing	☐ Yes	☐ No
New smell or taste disorder(s)	☐ Yes	☐ No
Nausea/vomiting, diarrhea, abdominal pain	☐ Yes	☐ No
Unexplained fatigue/malaise	☐ Yes	☐ No
Chills	☐ Yes	☐ No
Headache	☐ Yes	☐ No
Skin rash	☐ Yes	☐ No

3. Have you travelled or had close contact with anyone that has travelled in the past 14 days?
   - ☐ Yes
   - ☐ No

4. Have you had close contact with anyone with respiratory illness or a confirmed or probable case of COVID-19?
   - ☐ Yes – go to question 5
   - ☐ No – screening complete

5. Did you wear the required and/or recommended PPE according to the type of duties you were performing (e.g., goggles, gloves, mask and gown or N95 with aerosol generating medical procedures (AGMPs)) when you had close contact with a suspected or confirmed case of COVID-19?
   - ☐ Yes
   - ☐ No

Results of Screening Questions:

If the individual answers **NO to all questions from 1 through 4**, they have passed and can enter the PET Unit. They should be told to self-monitor for symptoms and be reminded about required re-screening at the end of their day/shift or when they leave the home.

If the individual answers **YES to any question from 1 through 3,** they have not passed and **cannot** enter the PET Unit. They should go home to self-isolate immediately. Staff should contact their manager/immediate supervisor.

If the individual answers **YES to question 4 and YES to question 5,** they have passed and can enter the PET Unit. They should be told to self-monitor for symptoms and be reminded about required re-screening at the end of their day/shift or when they leave the Unit.

If the individual answers **YES to question 4 and NO to question 5,** they have not passed and **cannot** enter the PET Unit. They should go home to self-isolate immediately. Staff should contact their manager/immediate supervisor.