



C I R Centre for Interdisciplinary Research
M M T in Music Media and Technology

CIRMMT USER'S GUIDE

Updated November 2020



Le génie pour l'industrie



CIRMMT USER GUIDE

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ABOUT CIRMMT

CIRMMT, the Centre for Interdisciplinary Research in Music Media and Technology, is centred at the Schulich School of Music of McGill University. It unites researchers and their students from several Quebec institutions - McGill University, l'Université de Montréal, l'Université de Sherbrooke, Concordia University, École de technologie supérieure, INRS and Marianopolis College. The CIRMMT community also includes administrative and technical staff, research associates, visiting scholars, musicians, and industrial associates. CIRMMT occupies a unique position on the international stage having developed intense research partnerships with other academic and research institutions, as well as diverse industry partners throughout the world.

CIRMMT is a multi-disciplinary research group that seeks to develop innovative approaches to the scientific study of music media and technology, to promote the application of newer technologies in science and the creative arts, and to provide an advanced research training environment. The CIRMMT community is interested in research that spans a wide range of topics from the creation of music in the composer's or performer's mind, the performance of music, its recording and/or transmission, and the reception of music by the listener. It is also interested in the ways in which vision, haptics, and touch interact with music and sound.

Communal Labs

McGill University's Schulich School of Music has granted CIRMMT 720 m² of space on the eighth floor of the Elizabeth Wirth Music Building with offices and laboratories. The offices house the Centre's administration and technical services, as well as visiting scholars. The remaining office space is allotted on a rotating, time-limited basis to researchers for specific collaborative projects.

CIRMMT's central laboratories are a shared resource for interdisciplinary, collaborative research projects and are available to all members of the Centre. There are six laboratories that have been designed with specific acoustic characteristics in order to maximize the variety of functionalities of the available research spaces.

Funding Opportunities for Members

CIRMMT offers several funding opportunities to members for interdisciplinary, collaborative research within the Centre's mandate. For more information on funding opportunities (for travel, research projects, internships at other institutions and outreach) visit our website: <http://www.cirmmt.org/research/support>

Research Program

CIRMMT's research program is organized into four axes, with working groups coordinated by team leaders. Each axis has one or two leaders and student coordinators, representing different partner institutions when possible. Although members are primarily affiliated to one axis, each axis encompasses several research disciplines and many members participate actively in several axes.

For more details on the research axes, please visit our website: <http://www.cirmmt.org/research>

ACCESS TO CIRMMT FACILITIES

CIRMMT's central facilities are located on the 8th floor of the Elizabeth Wirth Music Building, McGill University, 527 Sherbrooke St. West, Montreal. If the front door of this building is locked enter via Strathcona Music Building (555 Sherbrooke St. West) and turn right. At the end of the corridor, go through the passerelle to the right that leads to the Elizabeth Wirth Music Building. Once in the EWMB, elevators are on your left.

All CIRMMT Regular, Collaborator and Student members have access to CIRMMT premises (reception area, kitchen, photocopier, student computer lab) at all times. There are two entrances to the Centre on the 8th floor, both of which have card readers. The first entrance is directly in front of the elevators on the 8th floor. The second entrance is to your left when exiting the elevators.

McGill University students and faculty can use their McGill ID cards to get into the Centre. Members from other institutions must obtain a CIRMMT ID card from Centre staff. This ID card is free, but if lost, there is a non-refundable fee of \$20 for a replacement.

Members can obtain ID cards at CIRMMT Monday-Friday during reception hours.

Card reader access is for members only – please do not let anyone who is not involved in your research project into the Centre (with the exception of experimental subjects). Remember that all card reader doors have a silent alarm that is activated if the door is left open for any length of time. Do not prop open any card reader doors.

Lab Access

All six central CIRMMT labs have card readers. When members make lab bookings, the ID cards of all members listed in the booking are activated for the lab at the booking start time.

CIRMMT COMMON AREAS

Lounge Area

A lounge area near the front desk is available to CIRMMT members. A display and DVD player with headphones is installed here for members to view material related to their research.

Kitchenette

There is a kitchenette available to all CIRMMT staff and members – please be sure to keep the area clean. The kitchenette is stocked with glasses, utensils and cleaning supplies, coffee and tea, milk and sugar. We ask a contribution of \$1 per hot drink that can be placed in the money jar on the kitchen counter.

The fridge is very small so perishables left in there for more than two days will likely be thrown out. There is also a microwave for your use. **Food and drinks are not allowed in the CIRMMT labs.**

Photocopier

There is a photocopy machine on the 8th floor that is available to CIRMMT members. For those who do not have a McGill ID and wish to use the photocopier, please see the CIRMMT Administrator.

Sending a fax

As of April 2018 if you wish to send a fax, please use one of the photocopy machines and select the option to email. In the **To...** field, enter the fax number in accordance with the following examples:

- Inside McGill and local calls: **514xxxxxxx@fax.mcgill.ca**
- Long distance calls within North America: **1xxxxxxxxxxx@fax.mcgill.ca**
- Long distance calls overseas: **011xxxxxxxxxxx@fax.mcgill.ca**

Washrooms

The washrooms are located outside of CIRMMT. When exiting the elevators on the 8th floor of the Elizabeth Wirth Music Building, they are down the hall to the left.

Coat and Boot Racks

There are coat racks and boot trays located in the reception area of CIRMMT. Please leave all outside clothing and shoes there. ***This is particularly important during Winter or on rainy days, so that the lab floors and equipment remain clean and dry.***

Public Phone

The phone in the reception area can be used for short local calls (please keep these to a minimum from 9:00am to 5:00pm).

CIRMMT cannot take messages for members working in the labs, unless it is an emergency.

RESEARCH LABS

About the Labs

8th floor laboratory suite

CIRMMT's six central laboratories (8th floor, Elizabeth Wirth Music Building) are a shared resource available to all members of the CIRMMT community for interdisciplinary, collaborative research projects. Due to the Centre's research mandate, these labs cannot be used for teaching or commercial purposes.

The six labs were designed as complementary research spaces, with the highest quality acoustic specifications and equipment available. Each lab is designed to accommodate a range of research within the Centre's mandate, and together they offer a unique support for interdisciplinary projects bridging several areas and that are impossible to carry out in members' individual satellite labs.

- **Lab 1: A816, Spatial Audio Lab:** This space can be configured either as a hemi-anechoic chamber with sound absorption panels on walls and ceiling or as a diffusive space with diffusive panels on walls and ceiling. Used for acoustic measurements, room acoustic simulations, experimentation with diffusive sound fields, musical instrument directivity, transducer spatialization, and room and spatial sound reproduction perception in listeners. Up to 32 speakers can be installed as needed.
- **Lab 2: A817, Critical Listening Lab:** This is an ITU standard room with 7.2 multichannel surround audio and stereo audio for critical listening to new sound recording and mixing techniques, perceptual evaluation of music recording restoration techniques, and research on new methods for developing technical ear training skills as well as scientific evaluation of digital signal processing tools for data reduction. A number of digital audio workstations and playback systems for Blu-ray, DVD, SACD, AC3 and CD media are available.
- **Lab 3: A818, Performance and Recording Lab:** Recording of individual performers in configurations with absorptive acoustics for acoustically sensitive measurements or with more diffusive acoustics for musical recordings of solo instruments or small ensembles. Designed and equipped for motion capture measurements of performer movements, as well as virtual reality applications. Includes an 8-camera infrared motion capture system.
- **Lab 4: A821, Audiovisual Editing Lab:** Preparation of audio and video test materials, promotional and demo CD and DVD preparation, editing of content for archiving, viewing/listening space. Contains a 65" high-definition plasma display, a colour correct video monitor, HD video editing suite, and a 5.1 surround sound system. A multichannel audio editing station and high-speed connections to the MMR and Tanna Schulich and Pollack Halls have been installed with funds from the Pollack Foundation.
- **Lab 5: A820, Immersive Presence Lab:** The multimodal presentation system includes 32.4 multichannel audio with dedicated DSP for room simulation, a 16-camera motion capture camera system; high-resolution network communication. This laboratory represents a unique Motion Capture (MOCAP) and immersive audio research environment, connected to a 10-Gb copper network and fibre optic network.

- **Lab 6: A822, Perceptual Testing Lab:** Experimentation on music and sound perception with two testing workstations having headphone or surround sound listening capability.

Private workspace

- In addition to this, there is a CIRMMT student computer lab with up to five workstations. While this space is intended primarily for student use, all members have access to the room, its computers and scanner.

Open workspace

- The hallway, kitchen and reception area are considered open workspace and can be used by any of the members and their guests.

Multimedia Room (MMR)

Multimedia experimentation and performance research space shared with the Schulich School of Music. Equipped with flexible acoustics, a unique panelling system, and a large-scale multi-channel sound system, it can hold a full orchestra and choir.

Performance Research Laboratory (PeRL)

The PeRL allows rapid prototyping and creation of novel digital musical instruments (DMIs) and the study and detailed analysis of performance practice with these new devices during rehearsals and performances. Using the most advanced technologies available, this infrastructure makes possible long-term study and evaluations of interaction strategies developed by highly-skilled performers. Equipped with varied research equipment, such as wireless bio-signal electromyography, weight distribution systems, multichannel immersive speaker system, and high-speed thermal cameras, the newly renovated PeRL permits analysis of small ensemble performance.

Satellite laboratories

These labs are located at our partner universities and while not for general use, our members can contact them for special arrangements.

- **HexaGRIS studio, Université de Montréal:** (located at Université de Montreal: B-188-1) This composition and research studio is equipped with a 16 + 2 speaker system setup in the shape of a dome and includes several control surfaces and related audio equipment. This resource is available to the CIRMMT community and is booked through the Université de Montréal (CIRMMT members should contact Robert Normandeau for more information).
- **Université de Sherbrooke - Groupe d'Acoustique de l'Université de Sherbrooke (GAUS):** (located in department of Mechanical Engineer: 2500 Blvd de l'Université Sherbrooke) GAUS has essentially one common laboratory space where researchers share various equipment. The facility is intended for acoustics and vibration measurements with corresponding acquisition systems and electronics, and includes: a) fully anechoic room, b) hemi anechoic room coupled to a reverberant chamber, c) anechoic wind tunnel coupled to the anechoic room, d) Wave Field Synthesis facility installed in a dedicated room, e) acoustic materials characterization lab, f) ultrasound lab. (CIRMMT members should contact Nicolas Quaegebeur for more information about the facility)
- **École de technologie supérieure (ÉTS) - Infrastructure commune en acoustique pour la recherche (ICAR):** (located in the main ÉTS building) ICAR is a research and training laboratory

focused on industrial acoustics. Created in collaboration with the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST): the laboratory is equipped with: a) coupled semi-anechoic and reverberant chambers, b) audiometric booths, c) equipment for the characterization of acoustical materials, d) equipment for acoustic imaging. (CIRMMT members should contact Olivier Doutres for more information about the facility).

Using the Labs

All CIRMMT members can book labs for interdisciplinary, collaborative research. CIRMMT labs are allocated on a per-experiment basis for a maximum of two months per booking.

All lab doors have card readers, for which your ID card is activated at the start time of your lab booking.

All lab booking requests are made via CIRMMT's online booking system:

<https://booking.cirmmt.org/items/labs/>

You will require your user name and password to access this site.

For complete information on the following issues, please look for the 'Information' menu found on the left hand side of the booking site: <https://booking.cirmmt.org>

- How to use the online booking system (site navigation)
- Assessment of you booking request
- CIRMMT lab and equipment allocation policy and procedures
- Off-site equipment loan agreement
- Reporting equipment malfunctions

You will receive an automated email indicating that your request has been submitted. All bookings that include technical assistance of any kind (including use of CIRMMT equipment that is not part of the default configuration of the lab) are dependent on the availabilities of the technical staff.

Technical Assistance

Technical staff are available during normal business hours (9:00am to 5:00pm, Monday to Friday). If a booking request involves technical setup and special equipment, the technical staff will meet with you to discuss your project, make sure that there is enough time for setup/breakdown and that the equipment selected is appropriate for your experiment. Please make an effort to keep CIRMMT's technical staff informed in as much detail as possible, as far in advance as possible, of any changes to technical requirements that may be necessary during your lab booking.

Membership Fees

Since June 30 2020, CIRMMT Regular members are required to contribute membership fees. In order to be compliant with the various funding bodies, we must be able to document the costs associated with a fixed membership rate based on CIRMMT's previous year's expenditures and/or the current year budget. Three different membership categories are possible, so it is flexible and can reflect the broad range of situations of our members. The policy is fully explained in a document available on our website: <https://www.cirmmt.org/members/cirmmt-membership-fee-policy> .

Server Room Access

The Server Room contains most of the dedicated audio and digital processing equipment for the CIRMMT labs. In cases where members need access to this equipment in order to carry out their research, a designated member will have their ID card activated for Server Room access for the

duration of the lab booking. Racks in the Server Room are clearly labeled by lab name and number, and access is limited to the subsystem needed for the project. If you have been given Server Room access for a lab booking, please do not loan your card out to other members to access this space. Modifying other systems in the Server Room is a serious offence and compromises the research of fellow members.

Computer Access

Members can access the computers in the labs by using their CIRMMT login and password. Please be sure to log off of all CIRMMT computers before leaving the Centre. Please do not install or remove software from the computers without prior approval of the Systems Manager.

Environmental Control

Lab temperature and humidity levels are maintained by McGill and large variations are possible, especially in the seasonal transition periods. Temperature is generally adjustable at the local level, but humidity levels are not. For experiments requiring stable environmental conditions, please consult with CIRMMT staff to determine the most appropriate time for your project. Any projects requiring critical environmental control may not be appropriate for the CIRMMT labs.

Lab Safety

All CIRMMT members must take an introductory orientation workshop to learn about the CIRMMT labs and resources before using the labs. In some cases, members must take accreditation workshops in order to be eligible to use the default systems in the labs. This applies in particular to the motion capture system in lab A818, and the immersive speaker system in lab A820.

Please note that the lab doors are acoustically massive and can be difficult to close. Please ensure they are both locked and latched when you leave! It may require some muscle.

Emergency or Injury

In case of an emergency or injury, dial 911 and call Campus Security Services at 514-398-3000 (ext. 3000 if you're using a McGill phone).

There is a First Aid kit located in the CIRMMT kitchenette, in the bottom drawer.

Fire

In case of fire in a lab:

1. Evacuate the lab immediately. If your exit is blocked, use the fire extinguisher located in the lab to clear an exit path. Instructions on use are below. DO NOT try to fight the fire if your exit is not blocked. Toxic fumes may be emitted by burning equipment or acoustic treatment even if the fire is small.
2. If it is safe to do so, close the lab door after all persons have evacuated the lab.
3. If you do not already hear an alarm, pull the fire alarm located in the hall across from lab A817, or beside the main door of the Centre.
4. If you can, assist other persons who need help getting to the stairwell.
5. Evacuate the building. There is a stairwell in CIRMMT across from lab A817. There is also a stairwell near the elevators on the 8th floor.
6. Call 911 and Security Services at 514-398-3000 as soon as possible. Tell them the location of any persons with special needs who are in the stairwell, or of any injured persons who are still in the Centre.
7. Do not re-enter the building until authorized by the fire department or building evacuation team.

If you do fight a fire, remember the acronym "PASS" when using the extinguisher:

- P: Pull and twist the locking pin to break the seal.
- A: Aim low, and point the nozzle at the base of the fire.
- S: Squeeze the handle to release the extinguishing agent.
- S: Sweep from side to side until the fire is out.
- Be prepared to repeat the process if the fire breaks out again

Power Outage/Evacuation

In the case of a power outage, emergency lights will come on in various areas of CIRMMT. Rechargeable flashlights are also installed in each lab and in the Server Room. In the event of a power failure, these will automatically turn on. Only remove these flashlights from the labs in the case of a power outage.

Evacuation procedures:

1. Secure hazardous materials if you are working with compressed gasses in A818.
2. Assist persons with special needs.
3. Exit the building using the stairwell in CIRMMT (across from A817) or the stairwell next to the elevators on the 8th floor. DO NOT use the elevators. Stay calm.
4. Move 100m from the building, or to the location specified by the building evacuation team.
5. Do not re-enter the building until authorized by the evacuation team or Campus Security.

Experiments with Human Subjects

If you plan on conducting research in the CIRMMT labs involving human subjects, please read McGill University's research ethics policies. You must obtain a McGill-approved Research Ethics Board Certificate number before the experiment start date and provide CIRMMT with this number.

<http://www.mcgill.ca/research/researchers/compliance>

<http://www.mcgill.ca/research/researchers/compliance/human/reb-i-ii-iii>

For non-McGill members: you must obtain ethics approval from your institution first. You must then submit the approved application and the approval certificate to the McGill Research Ethics Administrator REB I & II for approval. There is no charge for this.

CIRMMT members conducting experiments with non-member participants must ensure that no participants are left unaccompanied at the Centre. Members are directly responsible for these participants and their actions while at CIRMMT.

Members who are conducting experiments with non-member subjects should provide the CIRMMT lab name and lab/control station phone numbers to all participants. When experiments take place during reception hours, participants can access the lab through the reception area. When experiments take place outside of reception hours, non-member participants can use the hall phone (to the left when exiting the elevators) to contact the researchers in the lab or control station and be admitted into the Centre.

Dissemination of Research Findings

When CIRMMT labs are used in a research project, please remember to list CIRMMT as part of the institutional affiliation in any publication resulting from your research. Example: "CIRMMT, Department X, University Y."

As this is not possible for certain journals, which only list the university, use of CIRMMT labs should be recognized in the acknowledgements section.

RESEARCH EQUIPMENT

About the Equipment

All equipment purchased on CIRMMT operating grants (with the exception of specific equipment bought on CFI-2 for use in satellite labs) is housed at the Centre and is available for use by all members of the CIRMMT community.

As with the labs, CIRMMT equipment is allocated to members for a maximum of two months per booking. Due to our research mandate, equipment cannot be used for commercial or teaching purposes.

Default Lab Equipment

Some of the Centre's equipment is permanently installed in the six research labs, the student computer lab and the lab control stations. An updated, detailed list of the default equipment is available on the CIRMMT website and the lab booking website: <https://booking.cirmmt.org/items/labs/>

Loan Pool Equipment

Equipment that is not part of the default lab configurations is available for loan to members, either for use at CIRMMT or for temporary use off-site. Members can use loan-pool equipment for research, demonstrations or concerts. All equipment loan pool requests are assessed by CIRMMT's technical staff.

As equipment is purchased, system details and user manuals will become available on the online booking system.

On-Site Loans

In order to reserve equipment for use in a CIRMMT lab, you must have an active lab booking during the period requested. The technical staff (or delegate) will install and remove the loan pool equipment from the lab at the times confirmed in the booking. If you've made an on-site booking, you must not remove the loan pool equipment from the lab at any point during your booking.

Off-Site Loans

NB: This is not available to Collaborator members

Off-Site loans include loan pool equipment that is borrowed for use outside of the central CIRMMT labs. Once the equipment leaves the premises, you are entirely responsible for it. Much of this equipment is extremely costly, so please read all loan terms and conditions very carefully before borrowing the equipment.

While you can request off-site equipment up to the last minute, there is no guarantee that your request will be approved.

The off-site loan agreement form must be signed. If equipment is lost, damaged or stolen off-campus, the member who signed the loan documents is responsible for paying the insurance deductible. In the case of McGill insurance, the deductible is \$1,000. If negligence is proven and insurance coverage no longer applies, the member who signed the loan documents will be held responsible for the full cost of equipment repair or replacement.

CONTACT INFORMATION

When calling from a McGill phone, dial the local tel# only. Instructions on calling from an outside phone are at the end of this section.

Staff/Facilities

Staff	<u>Local Tel.#</u>	<u>Room#</u>
<i>Bednar, Jacqueline: Office Administrator (maternity leave 2021)</i>	2464	A828
Lea St-Arnaud-Boffa: Research Centre Administrator (during mat. leave)	2464	A828
Boissinot, Julien: Systems Manager	3688	A828
Marandola, Fabrice: Director	6670	A830
TBA: Events Administrator (PT)	8793	A812
Méthot, Yves: Electronics Coordinator	4745	A827
Pohu, Sylvain: Technical Production Assistant (PT)	089883	A827

Other

Conference Room	089819	A807
Public Phone (CIRMMT lounge)	094821	A812
Server Room	089823	A819
Visiting Researcher Workstation (North)	089885	A825
Visiting Researcher Workstation (South)	089886	A825
CIRMMT Fax	514-398-7414	

Delivery/Mailing Address

CIRMMT
Schulich School of Music, McGill University
555 Sherbrooke Street West, room A812
Montreal, QC
Canada
H3A 1E3

Emergency

In case of emergency or injury, **dial 911** and call Security Services: **514-398-3000**

Non-emergency assistance:

During regular office hours, contact CIRMMT staff.

McGill non-emergency phone numbers:

Environmental Health & Safety 514-398-4563

Emergency Measures & Fire Prevention 514-398-3473

Security Services (Lost & Found) 514-398-4556

Waste Management 514-398-5066

McGill anonymous information hotline: 514-398-TIPS (8477)

Office for Sexual Violence Response, Support and Education (OSVRSE): 514-398-3954

How to give out a phone number with a six-digit extension

CIRMMT local telephone numbers that start with “0” are internal numbers and cannot be reached directly from outside of McGill University. Callers from outside McGill must first call an external number and then dial the local extension.

To reach any such extension, outside callers can dial 514-398-4400.

They will reach an automated phone attendant and will be asked to enter your internal phone number, followed by the number sign (so, for example, 012345#). Please note that this information will be requested in English, followed by a French message.

When giving out six-digit extension phone numbers to people, state your phone number as 514-398-4400, ext XXXXX (local tel#).

All CIRMMT local telephone #s that do not start with “0” are 4 digits can be reached directly by external people by dialing 514-398-XXXX (local tel#).