

# FCBG VR & Robotics Facility Use Policy & Agreement

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## A. General Description

### A.1. Mission

The VR Facility provides researchers with equipment and methods to conduct neuroscience experiments in realistic, controlled, measurable and safe virtual environments. The VR systems can be combined with other neural recording/stimulation devices from the other HNP Facilities: EEG, psychophysiology, neuromodulation, fMRI.

Several types of services are offered depending on the researchers' needs:

- Technical and scientific expertise in designing VR-based experiments
- Access to standard VR hardware and software
- Development of special hardware or software (specific to a research project)
- Co-development of hardware/software solutions (partially reusable in other research projects)
- Innovation projects in preparation for research applications

Services dedicated to individual research projects must be fully covered by the principal investigator (PI), according to the HNP/FCBG procedures and the VR Facility price list. Co-development activities are financed on a shared basis with the PI, according to special prior agreement. Innovation projects are financed internally.

### A.2. Management

The Virtual Reality Facility & Robotics at the Fondation Campus Biotech Geneva (FCBG) is part of the Human Neuroscience Platform (HNP). The facility is managed by the Facility Manager and staff and is governed in coordination with the Faculty Advisors and the Platform Advisory Committee (PAC) including faculty of the EPFL and University of Geneva. Faculty Advisors as well as the PAC are appointed by the FCBG steering committee. The staff members as well as the faculty advisor are listed in Appendix C.1.

### A.3. Study Eligibility

The platform will support research projects in human neuroscience according to its mission as defined above. Animal studies are not permitted at the HNP Virtual Reality & Robotics facility.

All human studies must have a current, valid, Ethics Committee Approval. It is the responsibility of the Principal Investigator (PI) to ensure that a valid Ethics Committee Approval is in place, and that all aspects of the human study are performed consistently with that approval.

In case of limited resources, priority is given to projects proposed by principal investigators (PIs) based at Campus Biotech (from UNIGE, EPFL and HUG).

### A.4. Getting an approval to conduct a study

To obtain access to the Facility, the researchers must follow the procedure outlined below and regulated in detail in the following sections:

To rent equipment:

- The PI fills out the online application form available at <https://hnp.fcbg.ch> or sends a signed application form via email to [vr@fcbg.ch](mailto:vr@fcbg.ch), indicating the required resources and time, as well users (researchers) involved.
- The Faculty Advisors evaluate the project on the basis of its scientific relevance and available resources.
- When approved by the Faculty Advisors, the project receives a project code.
- Users contact [vr@fcbg.ch](mailto:vr@fcbg.ch) to request training on the requested resources.
- Once fully trained, users can book the required resources in our [online booking system](#) using the project code.

To request software development:

- The PI sends a signed application form via email to [vr@fcbg.ch](mailto:vr@fcbg.ch), with a description of the study and the required software as precise as possible.
- A meeting between the PIs and the VR staff is organized to talk about development, cost and time.
- After receiving a quote for the development, the PIs must return it signed to the VR team in case it is accepted.
- The Faculty Advisors evaluate the project on the basis of its scientific relevance and available resources.
- When approved by the Faculty Advisors, development can begin.

The Faculty Advisors may at their discretion require additional information, assurance or documents before approving a project. They may also make such requirements of an already ongoing project and suspend it until they are satisfied.

Please note that:

- We do not intend to scrutinize your research plans, but we do need some control over what happens in our Facility.
- We are well equipped, but our resources are not unlimited. If we exceed our capacity, we may have to introduce additional rules.

## B. Virtual Reality & Robotics Facility Use Policy

### B.1. Training

Using the Facility resources requires prior training. Depending on the complexity of the relevant equipment and experience of the user, the required full training may require numerous sessions. Researchers requiring training should contact the Facility team indicating the project they are involved in. You can ask the training price to the Facility team ([vr@fcbg.ch](mailto:vr@fcbg.ch)).

### B.2. Responsibilities

The employer of the PI bears the general responsibility for the study.

It is the responsibility of the PI that any experiment conducted at the Facility, for which an ethical approval is required, has obtained it and is performed in accordance with it.

The participants are under the responsibility of the researchers and should be never left unattended.

### B.3. Equipment

The equipment available at the VR & Rob facility is listed in Appendix C.2

#### Caring for equipment

Users are responsible for the proper use of the Facility resources.

It is understood that equipment in constant use might wear out or occasionally experience a break down. You will not be held responsible, but we cannot fix items unless we know they are broken.

Please, report all broken equipment and equipment failures immediately to the MRI facility staff via email ([vr@fcbg.ch](mailto:vr@fcbg.ch)).

Computers should not be turned off after experiment(s). No software shall be installed, and no external devices (USB drives etc.) shall be plugged in the VR Facility computers by the users.

#### Setup and cleanup

Any researchers using the VR & Rob facility is required to set it up and clean it up properly. If the area is untidy when you arrive, or if equipment has not been returned to its proper position or default state, inform the platform staff by email.

#### Food and Drink

No food or drinks are allowed in the rooms. The only exception is that research subjects may have a drink of water prior to or immediately following an experiment.

#### Use of non-standard equipment

Research involving hardware modifications or installation of non-standard equipment requires the prior approval of the VR staffs.

### B.4. User Fees

The fees for the use of VR & Rob equipment, such as software development are detailed in <https://hnp.fcbg.ch/guidelines-and-fees/>

#### Cancellations

Reservations can be cancelled without fee up to 24 hours prior to the start of the allotted time slot by deleting the reservation on the booking system. After this deadline, the reserved time will be charged at rate of 50% unless it is not used by another study.

#### Billing

Invoices are sent to researchers every three months at the beginning of March, June, September, and December. Charges are based on the number of hours reserved on the calendar system or accepted

quote. In case of pending payment for prior invoices, the FCBG may revoke the access to the VR & Rob facility.

The income from VR & Rob fees will be used for covering the operational costs of the facility, buying consumables, upgrading the equipment of the facility, based on the needs evaluated by the PAC.

## B.5. Facility safety

### Guidelines

Please note that HMDs are generally for adults only. You can refer to the website or to the documentation of each device for more details.

### In case of Emergency

Users must follow the general Safety Directive of FCBG that can be found on the Extranet (<https://extranet.campusbiotech.ch/>).

In case of accident, please:

- Step 1: Do not move the subject but secure the place
- Step 2: Call 058 944 03 33 (security lodge) or 144
- Step 3: Contact the technical staff (058 201 02 10)

## B.6. Booking system

The facility equipment can be booked via the [Campus Biotech Calpendo system](#).

Researchers can book the equipment only after that the Faculty Advisors have approved the study.

Never use Facility resources for experiments other than that associated to the project code used for the booking.

Never use the Facility if you have not scheduled the time in the system.

Remember to save enough of your time slot for tidy up the equipment used.

## B.7. Data access

FCBG provide a data access system on each computer of the VR facility to import and export your data. Users must connect on the computer with the specific account of their lab. Different users on different projects initiated by the same lab share the same account. Please contact the VR staff via email ([vr@fcbg.ch](mailto:vr@fcbg.ch)) if you have not received or are not aware of the credentials associated to your lab.

Once connected to your lab session, a specific folder (specific to your lab, accessible from the root and mapped as a network drive) is used to safely import and export data on an external server. The same folder is accessible from your university network to retrieve the data later on.

Important:

- No external devices (USB drivers etc.) shall be plugged in the VR Facility computers
- This folder is only for temporary transfer of data to/from the VR facility. Data should not be stored long term on this server. It is the responsibility of the user to back-up his data in his

own institution's server once the transfer is done and clean his folder. The FCBG is not responsible for the loss of data that would not have been backed-up by the user. The VR facility manager can at any time clean the collaborative institutions folders of old data, if the rules are not being followed.

## B.8. Data management

### Data collection and documentation

It is the responsibility of the users to comply with the official regulation on data management, including data full anonymization. A good practice is for instance to attribute a code to your participant/subject, with the correspondence between the code and participant information only known by the principal investigator and stored in a safe place. All procedures must comply with the research protocol validated by the local ethics committee.

### Copyright and Intellectual Property Rights

The data and the results of the research are property of the PI. The FCBG does not claim any property right on the data or the results.

### Policies for data sharing and re-use

From the FCBG perspective the PI is the owner of the data and hence can share and reuse the data. If a late download of the data is necessary for sharing purposes, the FCBG will remit the data only to the PI staff upon written request of the PI.

## B.9. Authorship and Acknowledgments

### Human Neurosciences Platform rules of publication and acknowledgement:

All articles and publications that use any HNP resources (e.g. equipment, protocol assistance and expertise, analyses) must be communicated to the HNP upon final acceptance.

#### Authorship:

FCBG adheres to the basic rules of Scientific Integrity regarding authorship of scholar work, in accordance with the Swiss Academy of Science regulations available at <https://www.samw.ch/en/Projects/Overview-of-projects/Scientific-integrity.html>

In order to be considered as an author, a researcher must fulfil the following criteria:

- having made an essential contribution to the planning, carrying out, evaluation and verification of the research work;
- having participated in the writing of the manuscript;
- and having approved the final version of the manuscript.

Other people who have contributed to the study, but only partially fulfil the above criteria, must be acknowledged ("Acknowledgements"), but are not designated as authors.

When appropriate, the member(s) of the HNP team who is/are listed as co-author(s) shall have the following affiliation:

- Human Neuroscience Platform, Fondation Campus Biotech Geneva, Geneva, Switzerland

Acknowledgments:

When the HNP provides a standard platform contribution (standard data acquisition, assistance in setting up procedures for presentation and collection of behavioral data, etc.), a co-author from HNP is not required. However, we ask to add a sentence in the **acknowledgments**.

**For acknowledgements in articles, publications, projects, presentations..., the following text must be added (choose the text most adapted to the situation and space):**

- This study was supported by the Human Neuroscience Platform, Fondation Campus Biotech Geneva, Geneva, Switzerland.

*Or*

- This study was supported by the XX facility of the Human Neuroscience Platform, Fondation Campus Biotech Geneva, Geneva, Switzerland.

*Or*

- The authors thank XX (XX Facility, Human Neuroscience Platform, Fondation Campus Biotech Geneva) for his/her/their help with ...

*Or*

- This work was supported by the Human Neuroscience Platform, Fondation Campus Biotech Geneva (FCBG), Geneva, Switzerland. The institutional members of the FCBG are the Swiss Federal Institute of Technology Lausanne (EPFL), the University of Geneva (UNIGE), and the Geneva University Hospital (HUG).

## C. Appendix

### C.1. Staff

Faculty Advisors:

- Prof. Alexander Mathis
- Prof. Daphné Bavelier

VR Manager:

- Margaux Dubessy ([margaux.dubessy@fcbg.ch](mailto:margaux.dubessy@fcbg.ch))

VR engineers :

- Antoine Provost ([antoine.provost@fcbg.ch](mailto:antoine.provost@fcbg.ch))
- Nathan Attia ([nathan.attia@fcbg.ch](mailto:nathan.attia@fcbg.ch))
- Maël Lacour ([mael.lacour@fcbg.ch](mailto:mael.lacour@fcbg.ch))
- Arthur Trivier ([arthur.trivier@fcbg.ch](mailto:arthur.trivier@fcbg.ch))

## C.2. Equipment List

**VR booth:** Experimental booth dedicated to VR experiment, computer VR ready available (~7m<sup>2</sup>)

**VR room 1:** Experimental room dedicated to VR, computer VR ready available (~15m<sup>2</sup>)

**VR room 2:** Experimental room dedicated to VR and motion capture, computer VR ready available (~50m<sup>2</sup>)

**VR laptop:** Alien ware Area-51m (i7, RTX 2080 Super)

**Samsung Tab 7:** android tablet

**Pico Neo 3 Pro Eye:** Stand-alone head mounted display with Tobii eye tracking (90Hz)  
(<https://www.picoxr.com/global/products/neo3-pro-eye>)

**Pico 4:** Stand-alone head mounted display with integrated eye tracking, face tracking and hand tracking (<https://www.picoxr.com/global/products/pico4>)

**Meta Quest 2:** Stand-alone head mounted display  
(<https://www.meta.com/fr/quest/products/quest-2/>)

**HCT Vive Pro Eye:** Head Mounted Display to be use with a PC  
([https://dl4.htc.com/Web\\_materials/Manual/Vive\\_Pro\\_Eye/VIVE\\_Pro\\_Eye\\_user\\_guide.pdf?\\_ga=2.120901512.1442302517.1596551369-1238038613.1588930841](https://dl4.htc.com/Web_materials/Manual/Vive_Pro_Eye/VIVE_Pro_Eye_user_guide.pdf?_ga=2.120901512.1442302517.1596551369-1238038613.1588930841))

### MRI compatible VR Setup:

**VisualSystem HD NordicNeuroLab:** capable of stereoscopic vision, with a resolution of 1920x1080 refresh rate 60Hz and integrated eye-tracking cameras  
(<https://www.nordicneurolab.com/product/visualsystem-hd>)

**Motion Capture System Qualisys:** 7 cameras compatible with the MRI  
(<https://www.qualisys.com/cameras/oqus-mri/>)

**HoloLens 2:** Standalone Mixed Reality Display (<https://www.microsoft.com/en-us/hololens/hardware>)

**Stereoscopic screen:** 4x2.5 m, dual Barco F50 projectors, Infitec passive stereo, resolution 2560x1600 at 120Hz

**Motion Capture System Optitrack:** the setup is composed by 12 cameras, 2 equipped suits and various rigidbody setup (<https://www.optitrack.com/products/primex-13/>)

**Motion Capture system Xsense:** inertial sensor modules

**Quattrocento:** It is possible to visualize different types of signals: surface electromyography (sEMG), intramuscular electromyography (iEMG), electrocardiogram (ECG) and electroencephalogram (EEG).



### C.3. Use and training fares

Please refer to the HNP User Rates and fees available in <https://hnp.fcbg.ch/guidelines-and-fees/> for the fees regarding each equipment or service.

Please refer to the VR team for training.

**Pilot studies:** to pilot new experiments, researchers have up to 4 participants (healthy and adults) free of charge. Filling the protocol application form is nonetheless required for pilot studies.

**Late cancellation** will be charged at rate of 50% (under 24 hours before).