Centre de recherche
interdisciplinaire
en réadaptation
du Montréal métropolitain

Development Plan 2022-2028

Orientations and Key Facts

Note: Tables, figures and page numbers in this document refer to the Development Plan; click here to view the full Development Plan *(in French only)*.

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CRIR'S MISSION

To optimize the functional capacity and performance, participation and social inclusion of people with physical disabilities through research in the biomedical and psychosocial fields of rehabilitation.

RESEARCH AXES

1. Sensory, motor and cognitive functions and activities
   Theme 1.1: Functional mechanisms
   Theme 2.1: Physical and cognitive activities
2. Participation, social inclusion and rehabilitation services
   Theme 2.1: The person, their entourage and the community
   Theme 2.2: Services, systems and policies

Consistent with:

- The Centre's mission
- The missions of the clinical settings and CISSSs/CIUSSSs involved (research involving children, adolescents, adults and seniors; people living with visual, auditory, motor, cognitive, language and communication limitations)
- The vision and priorities of the universities and departments involved (see letters on p. 152 of the pdf)
- The FRQS strategic plan

FUNDAMENTAL CHARACTERISTICS

Excellence in…

- Interdisciplinary research
- Intersectoral research
- Multi-institutional research, in partnership with relevant stakeholders

STRUCTURE ET GOUVERNANCE (organizational chart, p. 17)

- CRIR's strength: collaboration between the various health and social services institutions that make it up, which facilitates conducting research projects involving clients, clinical staff and managers from several sites.
- Well-established and facilitating decision-making and management mechanisms (multi-site, multi-university, multi CISSS/CIUSSS)
- Mission of the *Pôle universitaire en réadaptation* (PUR): to work in association with one another to contribute to the autonomy and social integration of people with a physical disability through the provision of cutting-edge services, teaching and training, research, outreach, knowledge mobilization and technology and intervention assessment (*ETMI*)
    - Each institution has a regulatory research framework
    - Financial resources to support the strategic vision and the realization of the Centre's projects
        - In addition to the FRQS and FRQSC infrastructure funding

        - The institutions and their Foundations/CISSSs/CIUSSSs also invest nearly $3.8M/year ($2.1M/year in 2017) in their respective sites (administrative officers, engineers, clinical coordinators, site manager bonuses, etc.)
        - Resources are invested by the CIUSSSs and CISSSs towards specific projects, e.g. CFI application, publications, website, etc.
- COR (Research Orientation Committee): heads of axes and thematic units, site managers, clinical research coordinators (CRC), student representatives, CCS (Site Coordination Committee), scientific direction, administrative headquarters staff
- Decisions: PUR Board of Directors with recommendations from the scientific directors, the COR and the assembly of researchers
- Common REB for CRIR institutions (325 active projects in 2020-2021)
- Two new committees:
    - Innovative Practices in Research Ethics (*PIER*)
    - Inclusion, Diversity, Equity and Accessibility (IDEA) – p. 16
        - Consistent with the strategic action plans of the FRQ, University of Montreal, McGill, UQAM and CRIR member institutions and partners
- Key partners (e.g. INTER, REPAR, CIRRIS, AGE-WELL, MEDTEQ, ENOLL, Inclusive Society)

⇒ **Vision 2022-2028:**

- Develop new partnerships with research centres and networks
- Continue to plan and implement IDEA-related policies and practices

MEMBERS

- 95 researchers (Axis 1 = 52, Axis 2 = 43)
    - All researchers hold a full-time university faculty position or an associate faculty appointment
    - 48 researchers hold a professional licence
    - 22 disciplines (Table 1, p. 11)
    - 17 new researchers from 2017 to 2021, who have been awarded $2.3M in grants as principal or co-investigator
    - 15 recruitments planned between 2022 and 2028 in collaboration with universities and clinical settings (Table 3, p. 22)
    - 8 research chairs, including 5 Canada Research Chairs (p. 33)
    - 57 governance roles (p. 33, international, national, provincial, interprovincial)
    - Strong involvement in outreach activities (Figure 4, p. 54)
- 460 students (Table B.1.2, p. 36 of the pdf for students by year)
    - Axis 1 = 92 Masters, 135 PhD, 27 Postdocs & Fellows
    - Axis 2 = 108 Masters, 81 PhD, 17 Postdocs & Fellows
- 153 clinicians/health professional members (to our knowledge, we are the only research centre in Quebec with this type of membership)

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MECHANISMS FOR ACCOMPANYING AND SUPPORTING RESEARCHERS

- New researchers
  - Start-up fund (increased from $30K to $40K in 2019)
  - Mentoring program (academic and research)
- Partnerships and Knowledge Mobilization platform (Table 5, p. 49)
- Support for the shift to open science (p. 35 open access and O4 p. 20)
- Administrative headquarters staff (see team on the website)
  - Increased from 10 to 12 full-time equivalents from 2017 to 2021 (pp. 11-12 and 22-28)
  - Supported 338 activities: 142 scientific conferences, 121 management meetings (COR, CCS, PUR, 20th anniversary congress, etc.), 60 activities/workshops, 10 general assemblies
  - Digital Health Project Manager
- Highly qualified site personnel (see team on the website)
  - Clinical Research Coordinators
  - Administrative staff
  - Research Officers
  - Biomedical engineers
  - Electronic technicians and programmers
  - Methodological support
- REB specialized in the evaluation of projects involving persons with physical disabilities (including minors or persons incapable of giving consent)
- $900/year for each researcher or their students for scientific conferences and open access fees - $86.2K granted since 2017
- Financial assistance for the organization of a scientific conference of local, national or international scope ($1.5K to $5K) – $69.5K granted since 2017
- Translation and statistical services (max $2.5K/year)
- Support for database planning (REDCap), communications, such as sharing conference announcements and job postings (CRIR newsletter, website and social media), and creating online surveys
- $742.5K (average of $148K/year) in student scholarships awarded between 2017 and 2021, including the AGE-WELL contribution
  - The budget has been increased by 44%[1] compared to 2016-2017, from $110K to an average of $158K over the past 4 years (p. 26)
- "New Initiatives" Program
  - 44 projects funded and $398K awarded, including the contribution from the *Fondation En Vue*
  - Increase from $7K to $10K/project since 2019

[1] Erratum: the development plan mentions a 30% increase. The correct figure is 44%.

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⇒ **Vision 2022-2028:**

- Increase start-up funding for new researchers to $50K
- Develop new partnerships for the New Initiatives program
- Recruit 15 new researchers
- Increase staff salaries in line with indexation and salary progression
- Establish a new statistician position to support researchers and students

RESEARCH ACTIVITIES

- Nearly 1,700 articles published (40 in press) in peer-reviewed journals (increase of approx. 100 articles per year)
    - Axis 1 = 903; Axis 2 = 789 (Table 4, p. 34)
    - 60% in open access (Figure 3, p. 34)
- 107 books and book chapters published
- $70.7M in awards and grants since 2017
- 40 COVID-19 projects (see table on CRIR website)
- Of the 619 projects (65%) for which we have detailed data (p. 67 for calculation)
    - 200 projects involve the collaboration of at least two CRIR researchers
    - 103 projects involve at least two CRIR sites
    - 135 interaxis collaborations
    - 205 intersectoral projects (health, nature and technology, society and culture)
    - More than 80 projects with international collaborators
    - 36% of projects included dissemination to the scientific community (other than scientific publications)
    - 21% of projects included dissemination to the general public
    - 59 innovative evaluations and interventions with impacts on practice settings (Section E.3, p. 60)
    - 31 new technologies with impacts in practice settings (Section E.3, p. 63)

⇒ **Vision 2022-2028:**

- Follow CRIR's strategic orientations, described below
- Continue to support open science initiatives
- Promote the valorization of our members' scientific advances (Axelys)

RESEARCH PLATFORMS (see p. 38)

- 53 laboratories and research teams (3000 m^2) installed in clinical settings
- Several digital health technology platforms (e.g. BRILLIANT, MOvIT+)
- Development of living labs (e.g. MMFA, *Grands Ballets*, Segal Centre, VITALISE)
    - RehabMALL impact story
- Partnerships and knowledge mobilization
    - Model based on well-established principles in the field (Figure 1, p. 12)

- **250 projects** conducted with partnerships (185 with formal agreements)
- **283 partnerships** in research projects
  - 100 community organizations
  - 73 health care institutions
  - 58 public organizations
  - 52 private companies or clinics

⇒ **Vision 2022-2028:**

- Maintain CRIR's expertise in knowledge mobilization
- Establish new partnerships with community organizations, public agencies, private companies, etc.

DYNAMIC TRAINING ENVIRONMENT (see p. 45)

- Democratically elected student committee
- Valorization of transferable skills (p. 45): Workshops, Obtaining the TREMPLIN program part 1 in collaboration with 4 other research centres
- $742.5K (average of $148K/year) in student scholarships (master's, doctorate, postdoctoral) awarded between 2017 and 2021, including the contribution from AGE-WELL
  - Including $174K in scholarships to international students
- Annually: 1 welcome day, 5 workshops, 1 student colloquium, several networking activities
- Increased attention to ensuring that events and documents are available in both French and English
- Workspaces close to clinical programs specialized in physical disabilities
- Collaborations between researchers (e.g. inter-laboratory meetings)
  - 14 researchers (7 per axis) had at least one student in interaxis co-supervision since 2017 (for a total of at least 25 students)
  - 62 projects since 2017 that straddle both research axes
  - 32 researchers had students in inter-university co-supervision (23 students affiliated with an international university)

⇒ **Vision 2022-2028:**

- Increase the budget for student scholarships to $180K/year
- Implement a training infrastructure for students (TREMPLIN program)

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ORIENTATIONS

01

Integrate interdisciplinary and intersectoral perspectives for cutting-edge rehabilitation

02

Develop innovative strategies to support the continuum of rehabilitation services from acute care to the community

03

Promote inclusion, social justice, and social participation through inclusive environments

04

Advance knowledge mobilization science and its applications

05

Adapt to societal challenges in an agile way

06

Accelerate research in clinical settings by addressing organizational, ethical and policy issues

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OBJECTIVES, ACTIVITIES AND INDICATORS

O1– Integrate interdisciplinary and intersectoral perspectives for cutting-edge rehabilitation

Objectives	Develop and test innovative technologies and generate evidence for them	Consider cost effectiveness in the development and evaluation of our interventions and innovative approaches
Activities	• Living lab approach (BRILLIANT, VITALISE) and user-centered co-development • Creation of a technology interest group • Structuring support to citizen partners	• Integration of health economics researchers into research teams • Member training and application streams
Indicators	• Number of intersectoral projects funded • Number of researchers and students in the fields of Nature and Technology (NT) and Society and Culture (SC) • Number of health economics researchers • Number of projects funded that take into account cost impacts • Number of trainings on integrating cost effectiveness into projects • Percentage of infrastructure and operational funds dedicated to partnership research	

3-year milestone: technology interest group created; at least one cost-effective training (recorded and available on CRIR website); new CRIR citizen partner status

For example: … Participatory space (Duclos), Turcot Interchange (Leroux), chronic pain management (Sullivan, Wideman), posture, balance or muscle activity (Larivière, St-Onge), back pain (Preuss, Robbins) (p. 13)

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O2 – Develop innovative strategies to support the continuum of rehabilitation services from acute care to the community

Objectives	Fostering research related to megadata and artificial intelligence	Develop new methodologies for offering rehabilitation services centered on the specific needs of people with physical disabilities in the various spheres of their lives and to evaluate their impact
Activities	• BRILLIANT and VITALISE platforms • Structured bank of participants and access to the lakes and databases of the CRIR sites	• Concrete support to citizen partners • Intersectoral approach • Building new partnerships (partnerships and knowledge mobilization platform and innovation broker)
Indicators	• Number of intersectoral projects funded for customized approaches or services • Number of new intersectoral partnerships • Harmonized data transfer agreements between CRIR sites • Number of citizen partners who are members of CRIR • Number of ETMIs involving the expertise of our members	

3-year milestone: new status of citizen partner at CRIR; identification of potential partners and citizens partners

For example
… telerehabilitation projects, co-developed with our clinical partners, have targeted different clienteles, for example, improving physical function after a stroke (Kairy IURDPM), improving language in people with Parkinson's disease (Verduyckt IURDPM), and the transition to adolescence for children with physical disabilities (Ogourtsova HJR) (p. 13)

… CCSMTL has set up meetings for data lakes; PIER committee

O3 – Promote inclusion, social justice[2], and social participation through inclusive environments

Objectives	Encourage researchers to apply equity, diversity and inclusion principles in research projects and procedures	Increase research that addresses social justice issues to address societal challenges and foster inclusion and participation
Activities	• IDEA Committee (Inclusion, Diversity, Equity, Accessibility) • Workshops and training • Support for projects related to social justice • Involvement with diverse partners	
Indicators	• Number of projects related to social justice • Number of projects related to creating inclusive environments (human, physical, technological) • Number of partners from different sectors • Number of IDEA trainings	

3-year milestone: IDEA committee short- and medium-term plan; identification of potential partners

For example
... an environmental scan of awareness activities targeting the general perception of people with disabilities and training activities currently offered in Quebec (Rochette).

... co-creating a leisure experience in an accessible and inclusive theatre space for people with disabilities (Wittich INLB and CRLLM, in partnership with the Segal Centre for Performing Arts) and improving the accessibility of information and communication at the Montreal Museum of Fine Arts (MMFA), enhancing the museum experience for people with language difficulties (Kehayia HJR) (p. 14).

[2] Social justice refers to identifying the cause of inequity and removing the systemic barrier that results in a situation where no additional support or accommodation is needed.

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O4 – Advance knowledge mobilization science and its applications

Objectives	Increase the transfer and adoption of new technologies and interventions	Advance the science of implementation to improve the use of evidence in practice and foster practice change
Activities	• Participatory research • Workshops, summer schools and seminars	• Collaborative work with multiple stakeholders • Support for cutting-edge practices related to the IURDPM[3] mission • Open science
Indicators	• Number of projects dealing with implementation science • Number of workshops, summer schools and seminars • Number of knowledge transfer activities on research outcomes for various audiences, including the general public • Open access publications and open data	

3-year milestone: strategic planning of knowledge transfer activities for various audiences (nature, format, timing); deployment of action plan; increase in the proportion of open access scientific articles

For example

... by linking fundamental approaches in vision with clinical needs, Johnson's research (CRLLM) has led to improved living conditions for people with age-related macular degeneration through new rehabilitation interventions and innovative technologies (e.g., hearing aids for visually impaired seniors) (p. 14)

... Rochette, from the IURDPM, is collaborating with numerous community, private (foundations) and government partners to create a Quebec strategic plan for training and awareness activities related to people with functional limitations (p. 14)

... our actions in support of open access (pp. 15-16) and the activities of the PIER committee

[3] IURDPM= *Institut universitaire sur la réadaptation en déficience physique de Montréal*

O5 – Adapt to societal challenges in an agile way

Objectives	Adapting research to the new health realities	Addressing global health rehabilitation needs	Anticipating emerging issues in rehabilitation
Activities	Valorization of learning acquired during the COVID-19 pandemic	Support for global health projects	Strategies for engaging hard-to-reach or marginalized populations (indigenous peoples, refugees, immigrants, etc.)
Indicators	• Number of guides, policies and procedures developed • Number of projects with partners in low- and middle-income countries • Number of awareness and training activities • Number of new partnerships with representatives of marginalized groups		

3-year milestone: Identification of potential partners and funding arrangements for international projects

For example … CRIR researchers (Hunt HJR; Lencucha and Shikako-Thomas CRLLM; Hudon IURDPM) are developing new disaster response policies that adequately consider the needs of people with disabilities (p. 14).

O6 – Accelerate research in clinical settings by addressing organizational, ethical and policy issues

Objectives	Recognize the critical importance of integrating innovation in rehabilitation	Put forth ethical issues related to access to rehabilitation services	Promote the active involvement of rehabilitation managers and clinicians in research
Activities	• Advocacy so that organizational regulations account for the time dedicated to research by clinical rehabilitation settings • Valorization of social innovations	• Support for projects related to access to rehabilitation services	• Representation of our members at ministerial tables • Co-investigators, decision makers and clinicians integrated into research teams
Indicators	• Number of briefs submitted • Number of projects involving an innovation broker • Number of innovations implemented • Number of open letters • Number of ministerial committees • Number of meetings with decision makers • Advances in support mechanisms for clinical time in research • Number of researchers contributing to governmental scientific advice (ETMI, etc.)		

3-year milestone: Invitation to governmental tables (e.g. national table of research directors) and establishment of a dialogue; recurring item on the PUR agenda

For example
... the brief submitted by the scientific direction to the Stratégie québécoise de la recherche et de l'innovation (SQRI) to support the recognition of clinical hours dedicated to research and to concretely support participatory research (p. 15).

... the work of Hudon, a new researcher at the IURDPM, who is developing knowledge and tools to strengthen the ethics of physical rehabilitation care and services. She proposes to evaluate the strategies used by rehabilitation teams to deal with ethical issues in their practice, in the context of interventions with people with physical disabilities and chronic pain (p. 15).

CRIR
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1 common mission
2 research axes
6 unifying orientations
Great ambitions

To implement the essential innovations needed to meet today's and tomorrow's major health and social services challenges.