

# Socioeconomic benefits of funding for university research in Quebec's Estrie region

## Executive summary

PREPARED FOR:



Canada Foundation for Innovation (CFI)

Fonds de recherche du Québec (FRQ)

Ministère de l'Économie et de l'Innovation (MEI)

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This study demonstrates the socioeconomic benefits of complementary and shared research investments through the:

- Canada Foundation for Innovation (CFI)
- Ministère de l'Économie et de l'Innovation du Québec (MEI) and,
- Fonds de recherche du Québec (FRQ).

It does so by documenting the benefits, especially outside the postsecondary education sector, of a number of research projects conducted by the:

- Centre de recherche sur le vieillissement (CdRV) - Centre intégré universitaire de santé et de services sociaux de l'Estrie (CIUSSS de l'Estrie) and,
- Regroupement Ingénierie de technologies interactives en réadaptation (INTER).

Each of the research projects deals with aging and rehabilitation and is being carried out in the Estrie region of Quebec.

## Overall approach

The research team opted for a case study approach and identified eight thematic cases. They were selected based on the progress of the work and in consultation with stakeholders at CdRV and INTER who work in the fields of aging and rehabilitation.

Semi-structured interviews and a review of documentation and government data were used in the process of gathering information. A total of 44 interviews were conducted, as well as four preliminary interviews to identify and confirm the case studies. The interviews were held virtually, either by phone or videoconference, in the context of the COVID-19 pandemic.

This work took place between December 2020 and March 2021.

## Selected cases

	Case title	Objectives
1	Smart homes	Support the autonomy, safety and continued ability to live at home of individuals with cognitive impairment (schizophrenia, head trauma, intellectual impairment and dementia) and seniors who hope to remain at home, using smart homes (artificial intelligence technology and connected objects) capable of assisting occupants.
2	Telerehabilitation: TeraPlus telehealth platform project	Enable the remote delivery of rehabilitation care and services using a software platform to facilitate interactions, care (robotics) and transmission of the data needed to ensure service quality and accessibility and to preserve quality of life for patients and informal caregivers.
3	Actigraphy and kinematics of movement	Enable the remote delivery of care and services using a software platform to facilitate the collection of actigraphy data needed to help seniors and trauma victims with mobility.

	Case title	Objectives
4	Physical exercise during hemodialysis	Promote the benefits of healthy lifestyle habits and physical exercise during dialysis to improve the functional abilities of patients with diabetes, renal problems and other chronic illnesses experienced by seniors.
5	Neurostimulation therapy	Reduce the pain of seniors with chronic pain through neurostimulation with electrodes.
6	Non-pharmacological nutritional strategies for cognitive impairments	Prevent cognitive decline during aging (from mild cognitive impairment to Alzheimer's disease) by developing a nutritional supplement (fatty acid and ketone).
7	Geriatric nutrition	Prevent malnutrition and nutritional deficiencies in hospitalized seniors and care home residents using dietary supplements to minimize weight loss, maximize lucidity and decrease medication use.
8	Living laboratory and mobility: the Mobilainés project	Co-create research projects, with and for seniors, on the reorganization of space, innovative communication and intersectoral partnership initiatives. These would be free from prejudice and take participants' interests into account in order to make a real difference in the lives of seniors and create potential for sustainability.

## Impacts on academia

### Synergy of funding sources

The results of this study show that research funding has major impacts at the university level. FRQ, MEI and CFI funding often helps lay a foundation in terms of infrastructure (e.g., the purchase of equipment and software), and allows researchers to create the multidisciplinary teams and develop the skills needed to carry out their projects. In several cases, these initial funding sources have a leveraging effect that made it possible to secure additional funding.

### Research group creation and development

The immediate benefits of research funding include the creation of local research groups, including research collectives made up of researchers, professors, research professionals and students from various levels. These research groups ensure a critical mass of staff, ongoing efforts and, most often, a shared multidisciplinary vision, since members have backgrounds in different fields. This combination of expertise is often the key to successful work resulting in direct interventions with users.

### Interdisciplinary knowledge

Behind the multidisciplinary work is the development of skills that are often undervalued because of their abstract nature. Sustained funding for research groups, or at least researchers working in collaboration, ensures teamwork, as well as the development of skills needed for multidimensional interventions (e.g., interactions involving mechanical/technical instruments, interactions involving drug/supplement prescriptions, and interactions between human beings). These skills are based on several years of work on specific applications, in collaboration with specialists from complementary fields.

### **Students' learning and career development**

The cases also reveal the extent to which the research projects are beneficial for students. All the projects involve the participation of students, either as research assistants or student researchers whose graduate work (master's or doctorate) is related to the work being done by the research teams. These students often benefit from the research infrastructure to complete their work, which, in turn, allows them to enter promising sectors and actively contribute to knowledge development. Following their studies, many of them secure positions in the healthcare sector or academia.

## **Socioeconomic benefits**

### **Impacts on seniors' health and well-being**

Beyond academia, the projects have considerable benefits for the users and institutions involved. According to the results, the projects concretely contribute to improving seniors' health and wellness in one or more of the following ways:

- Nutritional improvement
- Better drug management
- Improved care
- Better access to care and services
- Increased autonomy

Although these projects are still being developed, they are already helping improve people's quality of life and, in some cases, allowing them to continue living at home. Moreover, by their very nature, some projects are helping younger populations who experience challenges similar to the ones faced by seniors.

### **Economic benefits and effects on local organizations**

Impacts on some institutions and organizations involved in the region were also observed. In addition to helping improve services for seniors, the projects help raise various partners' awareness of seniors' realities, increase the knowledge of some changemakers in the region and build connections among these stakeholders that did not exist before the projects were implemented. Although it is not necessarily the intended result, several projects also have economic benefits. In that regard, a better use of professional time, savings associated with people's extended autonomy, healthcare cost containment (prescription drugs and care), and increased revenues for users and organizations were observed. Since the projects are still being carried out, these benefits will likely increase in the coming years.