February 15, 2022



# Committee for Oversight of Research Units

**Annual Reporting for Faculty Supported Research Centres and Networks**

All Centres (provisional Centres; McGill Centres), Research groups and Networks that receive funding from the Faculty of Medicine and Health Sciences (FMHS) are required to provide an annual report to the Committee for Oversight of Research Units ([CORU](https://www.mcgill.ca/medhealthsci-research/policies-procedures/research-centres/guidelines/terms-reference-and-mandate-committee-oversight-research-units-coru))

The reporting period is May 1, 2021 – April 30, 2022.

Please submit your report to the Research Office, Faculty of Medicine and Health Sciences (**riac.med@mcgill.ca**) before the following deadline:

Monday, May 25, 2022

## Continued support from the Faculty is contingent on:

1. the receipt of the reporting documents on time,
2. the evaluation of reported activities by the Faculty’s Committee for Oversight of Research Units (CORU),
3. the availability of Faculty funds.

Your strong engagement in the faculty’s mission for continued research excellence and financial stewardship is truly appreciated.



# Annual Report of Activities and Outcomes

1. Name of the Unit: *Network for Oral and Bone Health Research*
2. Name of Unit leader & email address:

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1. If the Unit is **a Senate-approved** McGill Research Centre, indicate date of approval:
2. **Mission statement** of the Unit (~ 2 sentences):

The mission of the Network is to develop and disseminate new knowledge concerning oral- and bone-related health, and in-so-doing reduce health inequalities and promote the quality of life of the population of Quebec

1. **Total number of Unit members:** 143 researchers, 306 student members
2. **Number of members affiliated with McGill’s FMHS:** 43 researchers
3. **Unit’s website:**

 URL: www.rsbo.ca

**Note: Thewebsiteneeds to feature the following:**

* all sources of funding support (including the FMHS logo),
* the List of Members and their institutional affiliation with appropriate links,
* the activities supported by the Unit
* all previous Annual Reports.
1. **Explain the significance of the Unit’s mission at McGill and beyond** (1/2 page max.)

RSBO mission could be summarized as follows:

1. Improve research capacity
	* Increase Québec’s capacity to train, recruit and retain researchers in the field of oral and bone health
	* Support and promote fundamental research as a driver of innovation, in particular by providing more financial resources
	* Promote equity, diversity, and inclusion (EDI) within the scientific community.
2. Support innovation, particularly technological, to meet societal challenges
	* Develop specific biocompatible, sustainable, and environmentally safe biomaterials
	* Encourage dental industries to develop products that better meet societal challenges
	* Develop the use of artificial intelligence and information technology
3. Decompartmentalize the scientific community and promote partnerships
	* Promote the co-construction of research with all social actors, including government decision-makers patients and service users, health professionals and industry
	* Democratize knowledge and fight against public misinformation
	* Develop international alliances to meet common challenges
4. Promote sustainable health and a fair society
	* Develop research on the links between general health and oral health
	* Prevent oral and bone diseases and promote health, especially among the most disadvantages social groups
	* Support the decision making for the establishment of universal oral coverage.
5. **Alignment with the** [**Faculty’s Strategic Research Plan**](https://www.mcgill.ca/medhealthsci-research/about/strategic-research-plan) (1/2 page max.)

The RSBO and the Faculty of Medicine and Dentistry has in common many of the implementation strategies stated in the Strategic Plan, they work in and published together

RSBO through Major Structuring Projects program and the support for major infrastructures, plan to reach excellence in health science research. We consult our members and partners to define the research area to work on.

RSBO offer financial support to MSc and PhD students as well as postdoctoral fellows, the network also encourage the student and post-docs to present their research results to national and international meetings with its Support to Conference Program. RSBO acts for the purpose for the training of the next generation of researchers in oral and bone health.

Encourage knowledge transfer is one of the main missions of the RSBO, we advertise the work of our members to the public (Art & Science project, increase communication skills among the students (video competition, webinars, workshops), and regroup our, members from different fields to organize activities to interest to students, clinicians, scientists and the public.

1. **Major joint publications over the past 12 months** (including shared software, data repositories; with links) co-authored by at least two PI members of the Unit:

Karoichan A, Baudequin T, Al-Jallad H, Tabrizian M. Encapsulation and differentiation of adipose-derived mesenchymal stem cells in a biomimetic purine cross-linked chitosan sponge. J Biomed Mater Res A. 2022 Mar;110(3):585-594. doi: 10.1002/jbm.a.37311. Epub 2021 Sep 21. PMID: 34545996.

 <https://pubmed.ncbi.nlm.nih.gov/34545996/>

Rastinfard A, Dalisson B, Barralet J. Aqueous decomposition behavior of solid peroxides: Effect of pH and buffer composition on oxygen and hydrogen peroxide formation. Acta Biomater. 2022 Apr 8:S1742-7061(22)00199-4. doi: 10.1016/j.actbio.2022.04.004. Epub ahead of print. PMID: 35405328.

 <https://pubmed.ncbi.nlm.nih.gov/35405328/>

Denis A, Montreuil J, Reindl R, Berry GK, Harvey EJ, Bernstein M. Time-to-Incision for Hip Fractures in a Canadian Level-1 Trauma Centre: Are We Respecting the Guidelines?. *Can Geriatr J*. 2022;25(1):57-65. Published 2022 Mar 2. doi:10.5770/cgj.25.529

 <https://www.ncbi.nlm.nih.gov/pmc>

Buck E, Lee S, Gao Q, Tran SD, Tamimi F, Stone LS, Cerruti M. The Role of Surface Chemistry in the Osseointegration of PEEK Implants. ACS Biomater Sci Eng. 2022 Apr 11;8(4):1506-1521. doi: 10.1021/acsbiomaterials.1c01434. Epub 2022 Mar 15. PMID: 35290033.

<https://pubmed.ncbi.nlm.nih.gov/35290033/>

Davis EC, Jackson CM, Ting T, Harizaj A, Järvinen KM. Predictors and biomarkers of food allergy and sensitization in early childhood. Ann Allergy Asthma Immunol. 2022 Apr 29:S1081-1206(22)00390-8. doi: 10.1016/j.anai.2022.04.025. Epub ahead of print. PMID: 35490857.

<https://pubmed.ncbi.nlm.nih.gov/35490857/>

Khoury S, Parisien M, Thompson SJ, Vachon-Presseau E, Roy M, Martinsen AE, Winsvold BS; HUNT All-In Pain, Mundal IP, Zwart JA, Kania A, Mogil JS, Diatchenko L. Genome-wide analysis identifies impaired axonogenesis in chronic overlapping pain conditions. Brain. 2022 Apr 29;145(3):1111-1123. doi: 10.1093/brain/awab359. PMID: 34788396.

 <https://pubmed.ncbi.nlm.nih.gov/34788396/>

Bandres-Ciga S, Saez-Atienzar S, Kim JJ, Makarious MB, Faghri F, Diez-Fairen M, Iwaki H, Leonard H, Botia J, Ryten M, Hernandez D, Gibbs JR, Ding J, Gan-Or Z, Noyce A, Pihlstrom L, Torkamani A, Soltis AR, Dalgard CL; American Genome Center, Scholz SW, Traynor BJ, Ehrlich D, Scherzer CR, Bookman M, Cookson M, Blauwendraat C, Nalls MA, Singleton AB; International Parkinson Disease Genomics Consortium. Correction to: Large‑scale pathway specific polygenic risk and transcriptomic community network analysis identifies novel functional pathways in Parkinson disease. Acta Neuropathol. 2021 Jul;142(1):223-224. doi: 10.1007/s00401-021-02309-z. Erratum for: Acta Neuropathol. 2020 Sep;140(3):341-358. PMID: 33944973; PMCID: PMC8496667.

<https://pubmed.ncbi.nlm.nih.gov/33944973/>

Ludwig K, Ward LM, Khan N, Robinson ME, Miranda V, Bardai G, Moffatt P, Rauch F. Dominant osteogenesis imperfecta with low bone turnover caused by a heterozygous SP7 variant. Bone. 2022 Jul;160:116400. doi: 10.1016/j.bone.2022.116400. Epub 2022 Mar 31. PMID: 35367406.

<https://pubmed.ncbi.nlm.nih.gov/35367406/>

Taheri, Sareh et al. “Injectable, Pore-Forming, Perfusable Double-Network Hydrogels Resilient to Extreme Biomechanical Stimulations.” *Advanced science (Weinheim, Baden-Wurttemberg, Germany)* vol. 9,2 (2022): e2102627. doi:10.1002/advs.202102627

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8805581/>

Shermin T, Teng SW, Sohel F, Murshed M, Lu G. Bidirectional Mapping Coupled GAN for Generalized Zero-Shot Learning. IEEE Trans Image Process. 2022;31:721-733. doi: 10.1109/TIP.2021.3135480. Epub 2021 Dec 28. PMID: 34928799.

<https://pubmed.ncbi.nlm.nih.gov/34928799/>

Rezabeigi E, Schmitt C, Hadj Henni A, Barkun AN, Nazhat SN. In Vitro Evaluation of Real-Time Viscoelastic and Coagulation Properties of Various Classes of Topical Hemostatic Agents Using a Novel Contactless Nondestructive Technology. ACS Appl Mater Interfaces. 2022 Apr 13;14(14):16047-16061. doi: 10.1021/acsami.2c01741. Epub 2022 Mar 30. PMID: 35352550.

<https://pubmed.ncbi.nlm.nih.gov/35352550/>

Bender JL, Puri N, Salih S, D'Agostino NM, Tsimicalis A, Howard AF, Garland SN, Chalifour K, Drake EK, Marrato A, McKean NL, Gupta AA. Peer Support Needs and Preferences for Digital Peer Navigation among Adolescent and Young Adults with Cancer: A Canadian Cross-Sectional Survey. Curr Oncol. 2022 Feb 16;29(2):1163-1175. doi: 10.3390/curroncol29020099. PMID: 35200598; PMCID: PMC8870696.

<https://pubmed.ncbi.nlm.nih.gov/35200598/>

Shalmiev A, Nadeau G, Aaron M, Ouimet-Grennan E, Drouin S, Bertout L, Beaulieu P, St-Onge P, Veilleux LN, Rauch F, Rezgui A, Petrykey K, Laverdière C, Sinnett D, Alos N, Krajinovic M. Genetic factors contributing to late adverse musculoskeletal effects in childhood acute lymphoblastic leukemia survivors. Pharmacogenomics J. 2022 Feb;22(1):19-24. doi: 10.1038/s41397-021-00252-6. Epub 2021 Aug 26. PMID: 34446917.

<https://pubmed.ncbi.nlm.nih.gov/34446917/>

Maranda V, Gaumond MH, Moffatt P. The Osteogenesis Imperfecta Type V Mutant BRIL/IFITM5 Promotes Transcriptional Activation of MEF2, NFATc, and NR4A in Osteoblasts. Int J Mol Sci. 2022 Feb 15;23(4):2148. doi: 10.3390/ijms23042148. PMID: 35216266; PMCID: PMC8875491.

<https://pubmed.ncbi.nlm.nih.gov/35216266/>

Awh CC, Davis EC, Thomas MK, Thomas AS. SHORT-TERM OUTCOMES AFTER INTERIM TREATMENT WITH BROLUCIZUMAB: A Retrospective Case Series of a Single Center Experience. Retina. 2022 May 1;42(5):899-905. doi: 10.1097/IAE.0000000000003418. PMID: 35067611.

<https://pubmed.ncbi.nlm.nih.gov/35067611/>

1. **Major joint research projects funded over the past 12 months** (involving at least two PI members of the Unit:

The RSBO funded 3 major structuring project worth 50 k for each involving 3 members of the Unit **(for more details check the attached table)**

|  |  |  |
| --- | --- | --- |
| RSBO programs |  Description |  Budget (2021-2022) |
| Allocated to McGill Fac MD | TotalAllocated |
| Major structuring projects | Grant competition (50k) for researchers to support multidisciplinary and multisectoral projects.  | 150k (n=3 team) | 250k (n=5 teams) |
| Support for conference to trainees | Up to 1000$ support to one trainee per year per lab to attend an international conference. | 4.5k (n= 4) | 4.5k (n= 4) |
| Support for infrastructures | Support (25k) the development or operation of common infrastructures | 65 k (n=3) | 140k (n=3) |
| Fellowship competition | Awards (5 or 10k) for best evaluated grad students and postdocs from the network | 55k (n=7) | 145k (n=19) |
| Support for organization of international conferences | Support (3 or 4k) researchers in the organization of international conferences in Quebec |  | 3k (n=2) |
| Support for publication | Support open access fees for publications in the first quartile of their category |  | 6 k (n=3) |
| Total |  | 274.5 k (n=17) | 548.5k (n=36) |

1. **Major outreach activities** (e.g., seminar series, general public events):

4,5 k was allocated to 4 members to support their conferences **(for more details check the attached table)**

1. **Major training activities** (e.g., summer schools, co-supervision of trainees, practical workshops):

Please check the previous table

**List of activities organized by the RSBO & the student group (AGORA) in 2020-2021**

|  |  |  |  |
| --- | --- | --- | --- |
| Activity | Title | Panelists | Date |
| Workshops | RSBO talks Science  | Open participation  | Open date |
| Webinars | How Bones can help us lose fatHow to prevent proscrimination  | Michael BuccoleriRSBO members  | Apr 28th 2022May 26th 2022 |
| Social Events | RSBO members talk about career paths and life Trivia GameRSBO Discussion about Research and politics Fitness sessionHelp tutor a language to a refugee in needFitness session | RSBO members Michael BuccoleriAgora members Michael BuccoleriOpportutoring (group)Michael Buccoleri | Feb 3rd 2022Feb 17th 2022Apr 20th 2022Apr 30 th 2022Open dateMay 28 th 2022  |
| The RSBO virtual Days | The SPOT clinic(patient-partners) Prix CP Leblond AQPPT (Association Québécoise des personnes de petite taille)Prix Micheline BlainArt & Science panel | Maude VézinaSébastien BrûléDr. Maryam TabrizianNathalie LabelleDr. Pierre RainvilleDaniel Ha, artistMartin P-M, artistDr. René St-ArnaudDr. Derek RosenzweigDr. Gilles Lavigne | April 21st 2021April 21st 2021April 22nd 2021April 22nd 2021Arpil 23rd 2021 |

1. If applicable, **list new members** who joined the Unit in the past 12 months (indicate: Name, title, full/associate member, affiliation):

|  |  |  |  |
| --- | --- | --- | --- |
| **Name****Last, First**  | **Title****PI, Staff or Trainee****[Graduate student (GS) or post-doctoral fellow (PDF)]** | **Type of Membership Full, Associate** | **Affiliation(s)** |
| Bégin Marie-Josée | PI | Regular  | University of Montreal Hospital Center (CHUM) |

1. If applicable, **list members who have left the Unit** in the past 12 months (indicate: Name, title, full/associate member, affiliation): 0

# Financial report & forecast

|  |  |  |
| --- | --- | --- |
| **Expenses $** | **2021/22 report** | **2022/23 budget** |
| Total salaries |  92 989 | 95 000 |
| Training | 145 000 | 150 000 |
| Stipends | 4 780 | 10 000 |
| Outreach | 19 601 | 20 000 |
| Publications | 6 000 | 8 000 |
| Other(detail in #9 below) | 443 566 | 458 000 |
| **Total expenses** | 711 936$ | 741 100$ |

|  |  |  |
| --- | --- | --- |
| **Revenues $** | **2021/22 report** | **2022/23 budget** |
| Carryover | 286 228 | 167 542 |
| FMHS | 10 000 | 10 000 |
| User fees | 0 | 0 |
| Other sources(detail in #9 below) | 583 250 | 633 250 |
| **Total revenues** | 879 478$ | 810 792$ |

1. Budget justification and details (e.g., itemize if multiple salaries, detail other sources of funding):

 For more information, please consult the Excel file attached.

1. Explain why continued support from the FMHS is crucial to Unit (½ page max

The support from the Faculty of Medicine helps us to maintain important programs; they support researchers and trainees to develop innovative intersectoral projects or to develop further their research training. Without the support from the Faculty of Medicine at McGill, we would face challenges in adapting our programs to the needs of modern science, launching new programs and initiatives, creating new research projects targeted toward issues in oral and bone health, and developing new outreach initiatives to improve communication between researchers and the public.

1. Provide suggestions about how the Faculty could do better to support the Unit and research efforts in general (**no page limit but please be specific and unleash your creativity!**)

The FRQS has recently started a process of modernization of Quebec research networks. In this perspective, the RSBO is redefining its vision as well as its programs with the aim of better addressing the needs of our society and responding to the expectations of the FRQS. One of the important aspects of the RSBO renewal is the expansion of interprofessional and intersectoral collaborations or partnerships. In this perspective, the support of McGill Faculty of medicine is crucial for the RSBO, and we would like to involve the Faculty of medicine and health sciences in this process. We also hope that Faculty of medicine and health sciences would consider increasing its financial support to the RSBO and facilitate the renewal of its funding by the FRQS.