



Annual Reporting of Research Units

All provisional and established McGill Centres, Research groups and Networks affiliated with the Faculty of Medicine and Health Sciences (FMHS) are required to provide an annual report to the Dean via the Committee for Oversight of Research Units ([CORU](#)).

The reporting period is May 1, 2023 – April 30, 2024.

The deadline to submit your report to the Faculty's Research Office (riac.med@mcgill.ca) is

June 3, 2024

For units that receive financial support from the Faculty, continued support is contingent upon:

1. the receipt of the reporting documents on time,
2. the alignment of the Unit's structure and workings with [McGill Procedures for Research Units](#), and [Policies on Research Entities](#),
3. the quality of reported activities, and
4. the availability of Faculty funds.

Your collaboration on this exercise, and your continued engagement in the Faculty's mission for research excellence, are truly appreciated.

Annual Report of Activities and Outcomes

Name of the Unit: McGill Centre for Translational Research in Cancer (MCTRC)

Date of creation: 1996

Name of Unit Director:

Dr. Gerald Batist

3755 Chemin de la Côte-Sainte-Catherine office E-539, Montréal, QC. H3T 1E2

514-340-8222 ext. 25418

gerald.batist@mcgill.ca

Date of nomination in the role: 1996

As per [McGill Procedures for Research Units](#) Section 10.4, Research Units are led by a Director, who is appointed by, reports to, and is accountable to the Dean of FMHS, for a fixed term of 4 years, renewable.

Mission statement of the Unit (~2 sentences):

Provide a solid foundation based on state of the art platforms, multidisciplinary training and intense academic-industrial partnerships for the advancement of outstanding scientific knowledge at the interface of fundamental and clinical sciences.

Promote the translation of innovative laboratory and clinical research findings in every step of the cancer care continuum into real health improvements of cancer patients.

Membership

Ensure the full list of nominative members is featured on the Unit's website. Please refer to [McGill Procedures for Research Units](#) Section 7.

Number of

Regular Members: 36

Associate Members: 29

Affiliate Members: 7

Trainee Members: 127

Website:

Research Units must have a website with information about their mission statement, research objectives, membership and research activities.

Please note the website is also required to feature:

- 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.

Website address (URL): <https://www.mcgill.ca/translational-research-cancer/>

Please note the page limits, where indicated.

(minimum font size of 11 pts, use lay language)

1. Explain the significance of the Unit's mission at McGill and beyond (1/2 page max.)

MCTRC was developed to provide a particular emphasis in innovation oriented research, multidisciplinary training and patient care that focuses on enabling the downstream end of translational research. It is positioned at the interface between building experimental models for discovery of new therapeutic or diagnostic targets and treatments, and the actual validation of testing of their value in the clinical context. While many individual investigators aim to bring fundamental discoveries into clinical practice, and many clinical researchers aim to study the discoveries of others in clinical trials, thanks to the creation of a common space for the integration of translational cancer scientist and clinical scientist, the Centre is uniquely fitted to intimately link and support these efforts, so that the most relevant unmet medical needs observed in the clinic can be addressed in the lab, which in turn leads to adaptive and scientifically sound, state of the art clinical testing.

There has been an enormous deluge of cancer cases that are often more advanced than previously, coming to medical attention as a consequence of delays during the pandemic in screening, diagnosis and early treatments. Multiple models predict a significant increase in cancer mortality as a result, unless the healthcare systems can increase capacity by 30%. This is not possible, so the only solution is to turn to research translation to develop and implement innovations to address this challenge.

The MCTRC provides an efficient, creative and unique interface of high impact biomedical research with innovative healthcare delivery. Implementing state of the art discovery in cancer care is essential to facing the challenge of the rising challenge of cancer.

2. Alignment with the [Faculty's Strategic Research Plan](#) (1/2 page max.)

Cancer is one of the 4 major health and disease areas highlighted in the Faculties Strategic Research Plan. The activities of the MCTRC focus on 3 of the 4 cross-cutting strategic priorities of the Faculty: 1) Precision approaches to personalized medicine; 2) Biomedical and health sciences in the age of digital data; 3) Patient-centered continuum of care.

Our emphasis on personalized medicine dates back to the centre's conception in 1996 and is the guiding principle underlying the shared resources and core platforms we strive to generate and upkeep. These include the Clinical Research Unit, designated by the National Cancer Institute of Canada as a 'Centre of Excellence' and the most experienced Quebec site in conducting early-phase trials, essential to our translational research mandate. Patient-derived bio-specimens are biobanked in one of the eight Centre's Biobanks, and studied in our 25 research labs. Our liquid biopsy platform, for the detection of patient-specific tumor mutations in cell-free DNA, will allow for better treatment decisions and early metastasis detection. The Segal Proteomics Centre designs diagnostic kits to detect specific tumor mutated proteins in tissues and blood specimens. Our molecular modeling platform designs novel molecules that target and inhibit these newly discovered tumor mutations. New treatment devices and treatment planning softwares conceived by our medical physicists are validated in the Radiation Oncology department research unit. More recently, the MCTRC has been putting tremendous efforts into enhancing the use of data in Electronic Health Records (HER) as part of a Digital Health Initiative. The MCTRC is at the core of overcoming the current challenges, facilitating the implementation EHR, and promoting its use among its clinician to include the entry of patient data (multi-omics, digital pathology and images) and for practical uses in clinical trial matching, in best

practice and e.g. for populating tumor boards templates. These are just a few examples of how our resources and platforms may be used jointly to enhance the translation of personalized medicine innovations.

Our central role in several collaborations, among the university departments, McGill's affiliated units (the MUHC, GCI, MAGIC), multinational pharma companies (Alpha Tau in Israel, Radiomics in Belgium, Sunshine Biopharma, in USA), Quebec and USA-based biotechs (e.g. MRM Proteomics, Starpax, and Saltikvah), national and international consortia (e.g. Win Consortium) and government funding agencies at the provincial and federal levels have put the MCTRC at the centre translational research in the McGill environment, nationally and internationally.

3. Highlight the top-5 accomplishments of the Unit over the past 12 months (1 page max.).

1) Clinical Trials and public-private partnerships: Our partnership with Alpha Tau brought 3 clinical trials to the Jewish General Hospital: [NCT04002479](#) for intratumoral treatment using alpha radiation using EUS led by Dr. **C. Miller**, NCT06202339 for the intratumoral treatment of vulvar cancers, led by **Dr. Lecavalier** and NCT05323253 to treat Recurrent Cutaneous Squamous Cell Carcinoma led by **Dr. Bahoric**. In partnership with **Dr. Enger** and the University of Concordia, **Dr. C. Miller** was awarded a MEDTEQ+ grant to develop a software prototype to allow an augmented reality overlay and intuitive guidance using EUS. **Dr. W. Miller** is part of a multi-centre phase I investigator-initiated trial (NCT03772899), led by Dr. Bertrand (CHUM) combining healthy donor FMT (fecal microbiome transplant) with the PD-1 inhibitors in 20 previously untreated patients with advanced melanoma. Their results show that FMT from healthy donors is safe in the first-line setting and warrants further investigation in combination with immune checkpoint inhibitors. **2) The MCTRC continually supports the expansion translational research platforms:** The MCTRC coordinates the activities of the Marathon of Hope Canadian Cancer Network consortium, at the Jewish General Hospital (JGH). This Pan-Canadian initiative aims to sequence 15,000 cancer genomes across the country. Our researchers who participate in this initiative include **Drs. Gerald Batist, Alan Spatz, Mark Basik, Melica Brodeur, Sabrina Wurzba, Walter Gotlieb, Philippe Lefrancois, Michael Hier, Wilson Miller**. So far we have submitted over 280 cases and received over 1.2 M per year to support our biobanking and NGS efforts. Our support to **Dr. Borchers** led to the equipping and ISO certification (clinical-grade) of the Warren Y. Soper Clinical Proteomic Centre (to be inaugurated in the spring 2024). This facility will test diagnostic kits developed in the Segal Research Proteomics Centre and by private partners. We continuously support the Liquid Biopsy Platform - LBP (**Drs. Basik, Rose, Agulnik**) initiative in developing a clinical-grade LBP at the JGH. In the upcoming year, OPTILAB (**Dr. Spatz**) will integrate personalized ctDNA assays in their clinical workflow starting with metastatic lung cancer. Support provided to **Dr. Lefrancois** led to the establishment of the largest non-melanoma skin cancer biobank and cohort in Canada.

3) The Artificial Intelligence Initiative: The MCTRC coordinates the molecular tumour board between the JGH (**Dr. Freedman**) and the McGill University Health Centre. Building on this, we are integrating a patient-centric Clinical Decision Support System (CDSS) in oncology in partnership with MyPL to enhance decision-making during Tumor Board Meetings (**Dr. Basik, Batist**). Future research advancements in biomarkers and AI prediction models (**Dr. Enger**) for different tumour sites can be integrated into this CDSS, promising long-term benefits for our patient community by improving treatment outcomes and minimizing time wastage with mismatched treatments. **Dr. Enger** developed a large longitudinal integrated multimodal database of over 2000 patients. This data set can be explored by other

4) Cancer Translational Research Horizons: In November 2023, we hosted our Cancer Translational Research Horizons event at the Jewish General Hospital, showcasing our central role in forging partnerships between private industry, fundamental researchers, and clinician scientists. These collaborations are essential for rapidly translating scientific discoveries into clinical applications. The primary aims of this annual meeting are to promote collaborations between the private sector and our research community; and to provide opportunities for our trainees to engage with industry professionals, facilitating their transition into the private sector. This event drew over 130 registrations from a diverse group, including private sector representatives, funding agencies, academic researchers, clinician scientists, and trainees. The [program](#) featured the research of several MCTRC researchers including (**Drs. Trifiro, Saragovi, Batist, Enger, Basik**). The event was so successful that we decided to make this an [annual event](#).

5) **McMedHacks:** [McMedHacks](#) is an 8-week program designed to bridge the fields of medicine and artificial intelligence, targeting an interdisciplinary audience of researchers, clinicians, and entrepreneurs worldwide. This student-led initiative is supervised by Dr. **Enger**. The organizing committee includes students **Juan Duran, Sebastien Quetin, Hossein Jafarzadeh, Laya Rafiee, and Yujing Zou**. The workshop features tutorials, lectures, and discussion panels. As a spin-off of this event, the graduate students and postdoctoral fellows played an important role in launching the inaugural Sprint AI Training for African Medical Imaging Knowledge Translation (SPARK). SPARK aims to cultivate a new generation of African AI experts in medical imaging, enabling them to train their local research communities. More information on SPARK [here](#).

4. **Major joint publications over the past 12 months.** Please only feature peer-reviewed publications co-authored by at least two Regular/Associate/Affiliate Members of the Unit:

One of the core strengths of the MCTRC lays in the **initiation of clinical trials** to validate fundamental research discoveries. Over the past reporting period, 93 clinical trials were open for recruitment at the Segal Cancer Centre, 25 were investigator-initiated or academic studies. Jointly, these studies recruited over 340 patients. Among these, two studies merit highlight.

MCTRC members published 100 articles in peer-reviewed journals, with 49 of those being co-authored. Additionally, 60% of these publications are available as free open-access content. Below are some of the center's major joint publications from the reported period.

1. **Clinical variables associated with immune checkpoint inhibitor outcomes in patients with metastatic urothelial carcinoma: a multicentre retrospective cohort study.** Labidi S, Meti N, Barua R, Li M, Riromar J, Jiang DM, Fallah-Rad N, Sridhar SS, **Del Rincon SV**, Pezo RC, **Ferrario C**, Cheng S, Sacher AG, **Rose AAN**. *BMJ Open*. 2024 Mar 29;14(3):e081480. doi: 10.1136/bmjopen-2023-081480.

2. **MNK1/NODAL Signaling Promotes Invasive Progression of Breast Ductal Carcinoma In Situ.** Guo Q, Li VZ, Nichol JN, Huang F, Yang W, Preston SEJ, Talat Z, Lefrère H, Yu H, Zhang G, **Basik M**, Gonçalves C, Zhan Y, Plourde D, Su J, Torres J, Marques M, Habyan SA, **Bijian K**, Amant F, **Wichter M**, Behbod F, McCaffrey L, **Alaoui-Jamali M**, Giannakopoulos NV, Brackstone M, Postovit LM, **Del Rincón SV**, **Miller WH Jr**. *Cancer Res*. 2024 Apr 15;84(8):1373. doi: 10.1158/0008-5472.CAN-24-0461.

3. **The protective role of postoperative radiation therapy in low and intermediate grade major salivary gland malignancies: A study of the Canadian Head and Neck Collaborative Research Initiative.** Morand GB, Eskander A, Fu R, de Almeida J, Goldstein D, Noroozi H, Hosni A, Seikaly H, Tabet P, Pyne JM, Matthews TW, Dort J, Nakoneshny S, Christopoulos A, Bahig H, Johnson-Obaseki S, Hua N, Gaudet M, Jooya A, Nichols A, Laxague F, Cecchini M, Du J, Shapiro J, Karam I, Dziegielewski PT, Hanubal K, Erovic B, Grasl S, Davies J, Monteiro E, Gete M, Witterick I, Sadeghi N, Richardson K, Shenouda G, Maniakas A, Landry V, Gupta M, Zhou K, **Mlynarek AM**, Pusztaszeri M, **Sultanem K**, **Hier MP**. *Cancer*. 2023 Oct 15;129(20):3263-3274. doi: 10.1002/cncr.34932.

4. **Peroxisome disruption alters lipid metabolism and potentiates antitumor response with MAPK-targeted therapy in melanoma.** Huang F, Cai F, Dahabieh MS, Gunawardena K, Talebi A, Dehairs J, El-Turk F, Park JY, Li M, Goncalves C, Gagnon N, Su J, LaPierre JH, Gaub P, Joyal JS, Mitchell JJ, Swinnen JV, **Miller WH Jr**, **Del Rincón SV**. *J Clin Invest*. 2023 Oct 16;133(20):e166644. doi: 10.1172/JCI166644.

5. **MNK1/2 inhibition limits oncogenicity and metastasis of KIT-mutant melanoma.** Zhan Y, Guo J, Yang W, Goncalves C, Rzymiski T, Dreas A, Żyłkiewicz E, Mikulski M, Brzózka K, Golas A, Kong Y, Ma M, Huang F, Huor B, Guo Q, da Silva SD, Torres J, Cai Y, **Topisirovic I**, **Su J**, **Bijian K**, **Alaoui-Jamali MA**, Huang S, Journe F, Ghanem GE, **Miller WH Jr**, **Del Rincón SV**. *J Clin Invest*. 2024 Apr 15;134(8):e181338. doi: 10.1172/JCI181338.

6. **Targeting network circuitry in glioma.** **Robbins SM**, **Senger DL**. *Nat Cancer*. 2023 Oct;4(10):1406-1407. doi: 10.1038/s43018-023-00640-w.

7. **Fecal microbiota transplantation plus anti-PD-1 immunotherapy in advanced melanoma: a phase I trial.** Routy B, Lenahan JG, **Miller WH Jr**, Jamal R, Messaoudene M, Daisley BA, Hes C, Al KF, Martinez-Gili L, Punčochář M, Ernst S, Logan D, Belanger K, **Esfahani K**, Richard C, Ninkov M, Piccinno G, Armanini F, Pinto F, Krishnamoorthy M, Figueredo R, Thebault P, Takis P, Magrill J, Ramsay L, Derosa L, Marchesi JR, Parvathy SN,

Elkrief A, Watson IR, Lapointe R, Segata N, Haeryfar SMM, Mullish BH, Silverman MS, Burton JP, Maleki Vareki S. *Nat Med*. 2023 Aug;29(8):2121-2132. doi: 10.1038/s41591-023-02453-x. Epub 2023 Jul 6.

8. RNFB ubiquitylation of XRN2 facilitates R-loop resolution and restrains genomic instability in BRCA1 mutant cells. Krishnan R, Lapierre M, Gautreau B, Nixon KCJ, El Ghamrasni S, Patel PS, Hao J, Yerlici VT, Guturi KKN, St-Germain J, Mateo F, Saad A, Algouneh A, Earnshaw R, Shili D, Seitova A, Miller J, Khosraviani N, Penn A, Ho B, Sanchez O, Hande MP, Masson JY, Brown GW, **Alaoui-Jamali M, Reynolds JJ**, Arrowsmith C, Raught B, Pujana MA, Mekhail K, Stewart GS, Hakem A, Hakem R. *Nucleic Acids Res*. 2023 Oct 27;51(19):10484-10505. doi: 10.1093/nar/gkad733.

9. A second-generation eIF4A RNA helicase inhibitor exploits translational reprogramming as a vulnerability in triple-negative breast cancer. Cencic R, Im YK, Naineni SK, Moustafa-Kamal M, Jovanovic P, Sabourin V, Annis MG, Robert F, Schmeing TM, **Koromilas A**, Paquet M, Teodoro JG, Huang S, Siegel PM, **Topisirovic I, Ursini-Siegel J**, Pelletier J. *Proc Natl Acad Sci U S A*. 2024 Jan 23;121(4):e2318093121. doi: 10.1073/pnas.2318093121.

10. Current and new frontiers in hereditary cancer surveillance: Opportunities for liquid biopsy. Farncombe KM, Wong D, Norman ML, Oldfield LE, Sobotka JA, **Basik M**, Bombard Y, Carile V, Dawson L, **Foulkes WD**, Malkin D, Karsan A, Parkin P, Penney LS, Pollett A, Schrader KA, Pugh TJ, Kim RH; CHARM consortium. *Am J Hum Genet*. 2023 Oct 5;110(10):1616-1627. doi: 10.1016/j.ajhg.2023.08.014.

5. **Major joint research projects funded over the past 12 months** (including shared software, data repositories; with links, when relevant) involving at least two PI members of the Unit:

Our researchers have over 179 ongoing research projects that received nearly \$35M in combined funding during the reporting period. A list of the selected major projects funded during the reporting period can be found below.

1. At the crossroads between metabolic dysfunction and cancer - the next therapeutic frontier. PI: Peter Siegel and Daniela Quail, Faculty of Medicine and Health Sciences, and the Rosalind & Morris Goodman Cancer Institute. Co-PIs from the MCTRC Drs. Kleinam, Pollak. Contributions from eligible partners (In-Kind): \$5,979,293, Amount awarded from the CFI (Cash): \$3,763,360. 2024-2030.

2. Acquisition d'équipements pour le traitement de cancer par guidage magnétique de bactéries chargées d'agents thérapeutiques. Principal investigator : **Gerald Batist**. Co-investigators : **Te Vuong, Cristiano Ferrario**, Petr Kavan, **Khashayar Esfahani**, Gilles Soulez, Sylvain Martel, Ying Yuan, **Michael Hier**. *Ministère d'Économie et Innovation, Fondation de Hôpital général juif de Montréal*. Total amount: \$8,779,342 (2021-2024).

3. Cross-talk between translational machinery and metabolic programs in breast cancer. **Peter Siegel; Julie St-Pierre; William J. Muller, Nahum Sonenberg, and Vincent Giguère, Dr. Russell Jones, Arnim Pause, Frédérick Mallette, Michael Pollak, Ivan Topisirovic, Daniela Quail.** 2019 Terry Fox New Frontiers Program Project Grant (PPG) \$6M (2019-2025)

4. Marathon of Hope Quebec: Central and Year 2 Gold Cohort activities for McGill, the RI-MUHC and the JGH. **Gerald Batist, Nathalie Johnson, Alan Spatz, Walter Gotlieb, Sabrina Wurzba, Philippe Lefrancois, Melica Brodeur, and Mark Basik**, *TFRI* \$3,034,313.00 for years 1-5 - \$4.2M in funding for the whole project (2021-2026).

5. Endoscopic Ultrasound for Pancreatic Cancer treatment using Intratumoral Diffusing Alpha Radiation Emitters. **Corey Miller, PI and Shirin Enger Co-PI.** MEDTEQ, iTMT, MiTACS, AlphaTau \$1,540,821. (2023-2025).

6. Quebec Consortium for Novel Cancer Therapeutics and Biomarker (QCC) - this is a multi-institutional project. Principal Applicant: Morag Park & **George Zogopoulos** (McGill University/Goodman Cancer Research Centre), Co-PI: **Gerald Batist** (JGH), Fred Saad (CR-CHUM/IRIC), Denis-Claude Roy (HMR). Fonds d'accélération des collaborations en santé (FACS) program; Consortium québécois sur la découverte du médicament (CQDM) (2019/04 – 2024/03). \$1,289,986.29 for JGH during the reporting period.

7. Rationally designed approaches to target mRNA translation in eradicating poor outcome breast cancer.

Jerry Pelletier, **Ivan Topisirovic**, **Antonis Koromilas** and **Josie Ursini-Siegel**. *QBCF/IRICoR* (Lead Action, Breast Cancer) \$3M (2021-2024)

8. Inherited susceptibility to cancer: from gene discovery to mechanisms to clinical applications. **Foulkes WD, Fabian, Marc R**; Majewski, Jacek A. *CIHR* \$2,533,601 (2016-2024)

9. Innovation of a Proprietary Liquid Biopsy Assay for Early Diagnosis of Ovarian Cancer. **Uri Saragovi. Co-applicants** : Anne Marie Mes Masson; **Celia Greenwood**; Steffany Bennett; **Walter Gotlieb**. *CIHR*. \$1.1M (2020-2024)

10. Targeting lipid metabolism in chemoresistant breast cancer. **Basik, M**, and **Pollak, M**. *CIHR* \$1,009,800 (2021-2026)

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

1) Cancer Translational Research Horizons: In November 2023, we hosted our Cancer Translational Research Horizons event at the Jewish General Hospital, showcasing our central role in forging partnerships between private industry, fundamental researchers, and clinician scientists. These collaborations are essential for rapidly translating scientific discoveries into clinical applications. The primary aims of this annual meeting are to promote collaboration between the private sector and our research community; and to provide opportunities for our trainees to engage with industry professionals, facilitating their transition into the private sector. This event drew over 130 registrations from a diverse group, including private sector representatives, funding agencies, academic researchers, clinician scientists, and trainees. The [program](#) featured the research of several MCTRC researchers including (**Drs. Trifiro, Saragovi, Batist, Enger, Basik**). The event was so successful that we decided to make this an [annual event](#).

2) Translational and Clinical Research Rendez-vous in Oncology: **Drs. Witcher and Basik** organized the inaugural edition of the TCR Rendez-Vous in Oncology at the Lady Davis Institute in March 2024, this symposium aimed to unite clinicians and fundamental scientists to bridge the knowledge gaps between clinical practice and cutting-edge research. In this event, our researchers presented late-stage fundamental and pre-clinical studies (mainly unpublished data) to clinicians from the Segal Cancer Centre at the JGH. Conversely, it allowed our clinicians to engage directly with the latest scientific advancements, fostering a collaborative environment key to advancing oncology research and improving patient care. The program featured presentations from clinician scientists **Drs. Mascarella, Rose, Basik** and **Ferrario** and fundamental researchers, **Drs. Witcher, DelRincon, Kleinman** and **Wurzba**.

3) Multi-Omics Seminar Series: **Dr. Borchers** initiated a seminar series to showcase the new Wasen Y. Soper Clinical Proteomics Centre located at the Jewish General Hospital and to be inaugurated in the spring of 2024. This initiative aims to demonstrate to potential users the significant value that robust proteomics analysis can add to their projects. Each seminar features presentations by a current user of the proteomics centre and the centre's director, followed by an in-person or virtual tour of the facility. The first seminar of the series took place at the Lady Davis Institute in March and featured **Dr. Del Rincon's** work "Discoveries made in collaboration with the Segal Cancer Proteomics Centre - Novel roles for the MNK-eIF4E axis in cancer". The second will take place at the Jewish General Hospital in late May in the context of the Grand Opening Ceremony of the WYS Clinical Proteomics Centre. A third one will be organized in the fall.

4) Cancer and Molecular Regenerative Medicine Joint Seminar series: This series features weekly seminars with presentations from invited external speakers on Mondays and from Master, PhD and pos-doctoral fellows on Fridays. The series is organized by **Dr. Ursini-Siegel** and **Koren Mann**. In the past year, 44 trainees and 25 external speakers had the chance to present their results during these meetings. In addition to those, our trainees are also invited to the AI for PrimaryHealth Care Seminar Series that takes place at (McGill).

5) Creation of the MCTRC LinkedIn channel and the centre's new logo: The launch of our LinkedIn channel marked a significant step forward in our efforts to enhance our online presence and engage with a broader professional audience. In just over a year since its launch, the channel has garnered over 600 followers. This platform enables us to share our strategic plans, event updates, activity highlights, and career opportunities, as well as connect with peers and potential partners in the field of translational research in oncology.

6) International meetings organized by MCTRC investigators: **Dr. Kleinman** organized the Epigenomics of Common Diseases conference, Wellcome Trust, UK. She was also invited by Genome Canada and Génome Québec to their consultation sessions to inform their investment plan for the next 5 years. **Dr. Foulkes:** Organized the [2023 Breast Cancer Symposium in Montreal](#). Clinicians and researchers from over 30 countries gathered virtually for the ninth edition of this event which has come to be recognized as the major international conference that covers specific targeted therapies for hereditary cancer.

7. Governance body

please refer to [McGill Procedures for Research Units](#), Section 5

Each Research Unit must have a governance body, named and adapted to its size and scope, that provides strategic direction, and management guidance, and ensures accountability of the activities of the Research Unit.

The Dean of FMHS is responsible for forming, chairing and appointing members to the governance body, which shall be composed at a minimum of: the Lead Faculty Dean or delegate as Chair, Deans or delegates from each of the Faculties involved, the Director, two Regular Members of the Research Unit, and at least one member from every other membership category.

The Vice-President (Research and Innovation) or delegate will serve as a member of a Research Unit's governance body.

The governance body must meet annually at the invitation of the Lead Faculty Dean to review activities and membership, assess progress and performance, approve the annual report, the annual budget for operations, and provide guidance for any issues that may arise.

Existing Governance Body:

Chair: Shari R. Baum, Ph.D. (Delegate Vice Dean, Research, Faculty of Medicine and Health Sciences)

Director: Gerald Batist

Associate Director: Mark Basik

Regular Member: Shirin Enger and Stephen Robbins

Associate Members: Giuseppine Ursini Siegel

Affiliate Member: Jean Yves Mesmason

Trainee Member: Kathie Bozek and Parsa Bagherzadeh

Date of the Unit's last Board Meeting: 22/05/2024

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

1) McMedHacks: [McMedHacks](#) is an 8-week program designed to bridge the fields of medicine and artificial intelligence, targeting an interdisciplinary audience of researchers, clinicians, and entrepreneurs worldwide. This student-led initiative is supervised by Dr. **Enger**. The organizing committee includes students **Juan Duran, Sebastien Quetin, Hossein Jafarzadeh, Laya Rafiee, and Yujing Zou**. The workshop, which is open to the public, is free for students and requires a nominal fee for professional participants. It features tutorials, lectures, and discussion panels. During its third edition in the summer of 2023, the workshop attracted over 500 participants from more than 62 countries, consistent with attendance in the previous two years. Besides organizing the event, students also act as monitors, assisting participants with their virtual assignments.

2) Sprint AI Training for African Medical Imaging Knowledge Translation (SPARK): Graduate students and postdoctoral fellows from **Dr. Enger's** lab played an important role in launching the inaugural Sprint AI Training for African Medical Imaging Knowledge Translation (SPARK) program in collaboration with McMedHacks (a workshop organized by Medical Physics Unit (MPU)) and with the endorsement of the Medical Image Computing and Computer Assisted Interventions (MICCAI) Society. SPARK aims to cultivate a new generation of African AI experts in medical imaging, enabling them to train others. MPU Ph.D. students **Juan Duran, Sebastien Quetin, Hossein Jafarzadeh, and Yujing Zou** have taken on the responsibility of training teams of clinicians and scientists from Rwanda, South Africa, Tanzania, and Kenya, respectively. These four graduate students have provided virtual training sessions and travelled to each African country to conduct in-person training for their respective teams. Furthermore, postdoctoral fellows **Dr. Laya Rafiee** and **Dr. Parsa Bagherzadeh** have virtually trained teams from Cameroon and Ghana.

3) Translational Research Certificate: In collaboration with the Dept. of Pharmacology and Therapeutics (Drs. **Mann** and **Hébert**) the MCTRC is co-hosting the Translational Research Certificate. The certificate debuted in the Fall/2022 - Winter/2023 with courses in translational research, fundamentals of disease for graduate students and clinical mentorship for graduate students. The clinician-researchers at the MCTRC have been partners of this initiative since its inception and are committed to providing clinical mentorship in cancer. In the past year, **Dr. C. Miller** mentored three students.

4) Supervised students: During the past year, our investigators supervised 144 students in the several research topics a good part of these students. The number of master students summed up to 62, PhD students to 54, post-doctoral fellows 20 and residency fellows and summer school student summed up to 4 each. 23% were co-supervised between two investigators of the centre and other academic institutions in Montreal, including, the Godman Cancer Institute, Université de Montreal and Concordia University.

9. If applicable, **list new members** who joined the Unit in the past 12 months (indicate: Name, title, Regular/Associate/Affiliate Members, affiliation):

Corey Miller, Associate member of McGill Centre for Translational Research in Cancer, Assistant Professor at Division of Gastroenterology and Hepatology, Faculty of Medicine and Health Sciences, McGill University

Melica Brodeur, Regular member of McGill Centre for Translational Research in Cancer, Assistant Professor at Departments of Obstetrics & Gynecology and Oncology, Faculty of Medicine and Health Sciences, McGill University

Sabrina Wurzba, Regular member of McGill Centre for Translational Research in Cancer, Assistant professor at the Department of Otolaryngology-Head and Neck Surgery, Faculty of Medicine and Health Sciences, McGill University

Marco Antonio Mascarella, Associate member of McGill Centre for Translational Research in Cancer, Assistant professor at the Department of Otolaryngology-Head and Neck Surgery, Faculty of Medicine and Health Sciences, McGill University

Stephanie Wong, Associate member of McGill Centre for Translational Research in Cancer, Assistant Professor, McGill University, Department of Surgery and Oncology, McGill University

Susie Kit Sze Lau, Associate member of McGill Centre for Translational Research in Cancer, Associate Professor at Gerald Bronfman Department of Oncology, Faculty of Medicine and Health Sciences, McGill University

Kim Ma, Associate member of McGill Centre for Translational Research in Cancer, Assistant Professor at Gerald Bronfman Department of Oncology, Faculty of Medicine and Health Sciences, McGill University

Nahum Sonenberg, Regular member of McGill Centre for Translational Research in Cancer, Professor at Rosalind and Morris Goodman Cancer Institute, Department of Biochemistry, Faculty of Medicine and Health Sciences, McGill University

Terry Hebert, Associate member of McGill Centre for Translational Research in Cancer, Professor at the Department of Pharmacology and Therapeutics, School of Biomedical Sciences, McGill University

Armita Abolghasemi, Regular member of McGill Centre for Translational Research in Cancer, Project Coordinator, Lady Davis Institute, Jewish General Hospital

Beatrice Assouline Thomas, Regular member of McGill Centre for Translational Research in Cancer, Project Coordinator, Lady Davis Institute, Jewish General Hospital

Adriano Pimenta, Associate member of McGill Centre for Translational Research in Cancer, Project Coordinator, Lady Davis Institute, Jewish General Hospital

10. If applicable, **list members who have left the Unit** in the past 12 months (indicate: Name, title, Regular/Associate/Affiliate Members, affiliation):

Harjot Dhillon, Regular member of McGill Centre for Translational Research in Cancer, Project Coordinator, Lady Davis Institute, Jewish General Hospital

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

Translational research and innovation play a critical role in bridging the gap caused by a shortage of human resources in healthcare systems. By rapidly converting scientific discoveries into practical applications, these approaches enhance the efficiency and effectiveness of healthcare delivery. For instance, advancements in telemedicine and AI-driven diagnostic tools enable remote patient monitoring and automated analysis, reducing the reliance on physical presence and allowing healthcare professionals to manage larger patient volumes. Additionally, the development of personalized medicine through genomic research allows for more precise and efficient treatments, optimizing resource allocation and improving patient outcomes. Thus, translational research and innovation not only address human resource deficits but also enhance overall healthcare quality and accessibility.

As explained above, much of clinical and prevention research on cancer will be dictated by the overarching goal of building resilience in our cancer control and care processes. MCTRC's core translational research agenda will assist the development of strategies to address these challenges and provide leadership for McGill's scientific future in mitigating their impact on cancer prevention and care. Much of that work will stem from the MCTRC's educational mission, training the cancer scientists of tomorrow with the required eclecticism to face the new reality of academic medicine.

Together with the support from faculty requested below, the minimal funding required from FMHS will allow the MCTRC to be positioned as an important member of the McGill community, and will allow it to provide needed services for launch of clinical trials based on laboratory findings. We have secured funding for all other activities.

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

The Faculty has been supportive, especially since the revitalization of MCTRC in 2021. We are working on enhancing its visibility in the research milieu at McGill and across Quebec and beyond. We would appreciate opportunities to do that in the Faculty, by being highlighted in Newsletters and Focus-type magazines, as an example of early McGill leadership in the rapidly evolving fields of translational medicine in a range of areas, from biology to tech development and the application of AI in health research and healthcare services research. We would appreciate the Centre being formally represented in Faculty meetings, where relevant, and in turn, we can contribute to committee work where appropriate.

As we continue to build the pedagogical program, with mentoring and workshops, etc, we would also appreciate appearing in the various newsletters and as part of the faculty's training programs. The students and postdocs are extremely interested in learning about translational research in the context of small biotech entities, and their partnerships with academia. We look forward to Faculty highlighting these workshops and mentorship programs as part of preparing Faculty graduates for the various and changing options they face for future careers.

Of course, we would appreciate whatever funding opportunities, whether fully or in a matching structure, to support emerging research and teaching programs.